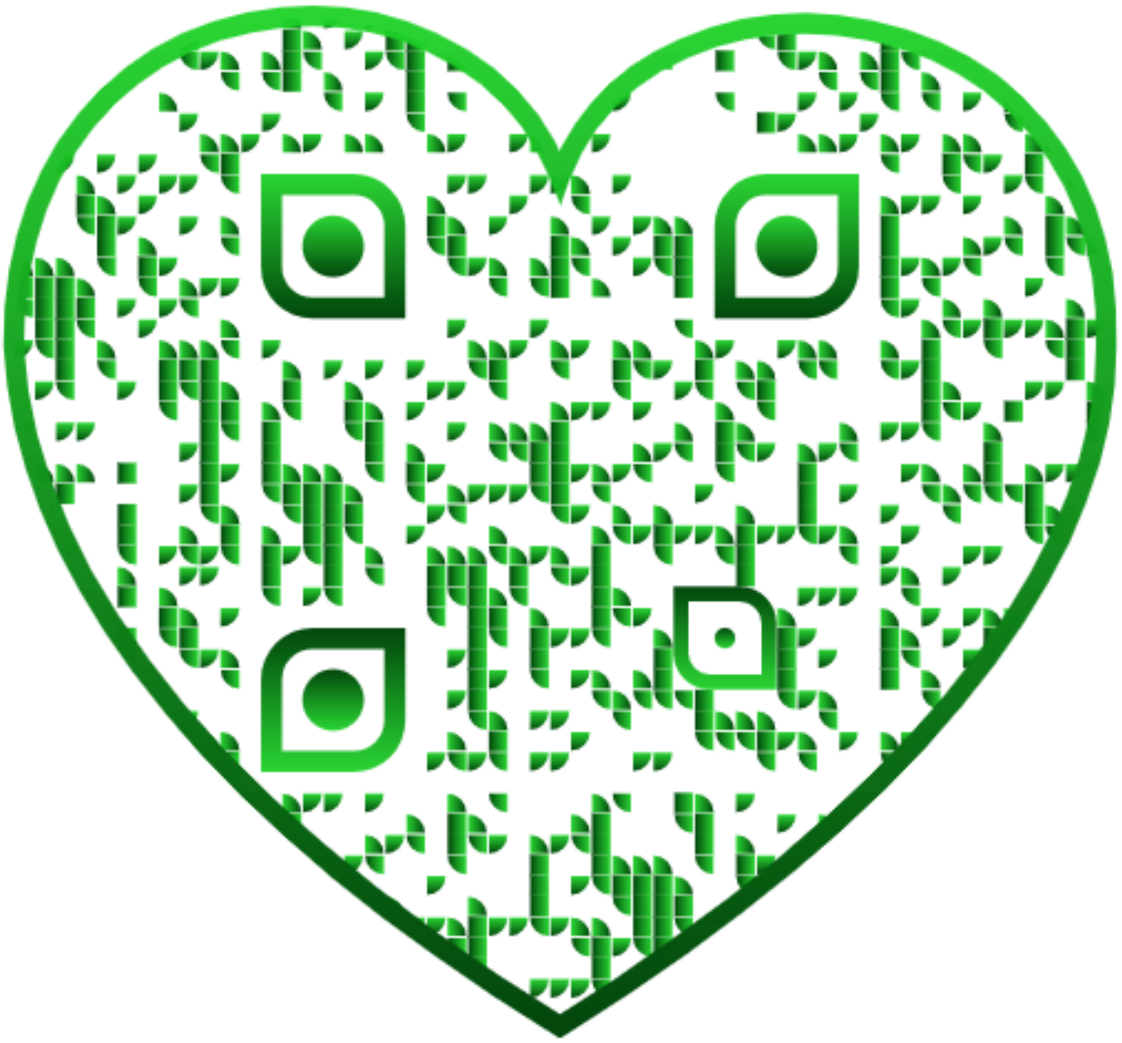
Afandina 2020 /2021

Simulation of Clinical Ophthalmology (Spot Diagnosis)

Special Thanks to Dr. Mohammed Hassan

Special Thanks to Dr. Ahmed Saber



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Diagnosis ? Right lower eyelid congenital entropion (it seems to be congenital because the patient is a child)

Pathophysiology ? Congenital hypertrophy of Orbecularis Oculi muscle.

Most serious complication: corneal irritation due to trichiasis → opacification

Treatment? Surgical

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Diagnosis: Left lower eyelid senile entropion (notice acrus senilis)

Pathophysiology: Horizontal laxity (palpebral ligaments) + weakness of lower lid retractors + overriding of orbicularis oculi

Most serious complication: corneal irritation due to trichiasis → opacification

Treatment? Surgical

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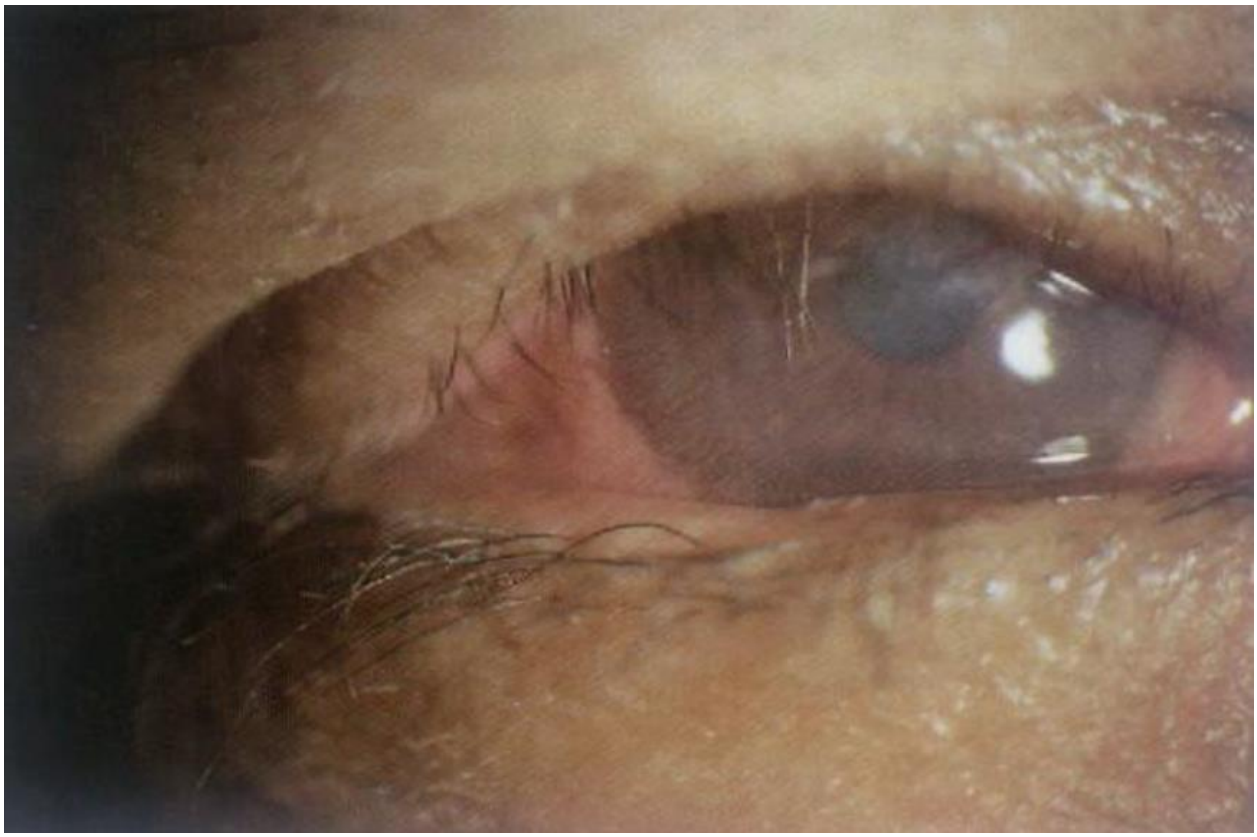

Diagnosis: Right upper eyelid trichiasis

Treatment: If less than 4 → epilation

If more → electrolysis, diathermy, or cryotherapy

Most serious complication and how to treat it :

corneal irritation due to trichiasis → opacification Treated by keratoplasty

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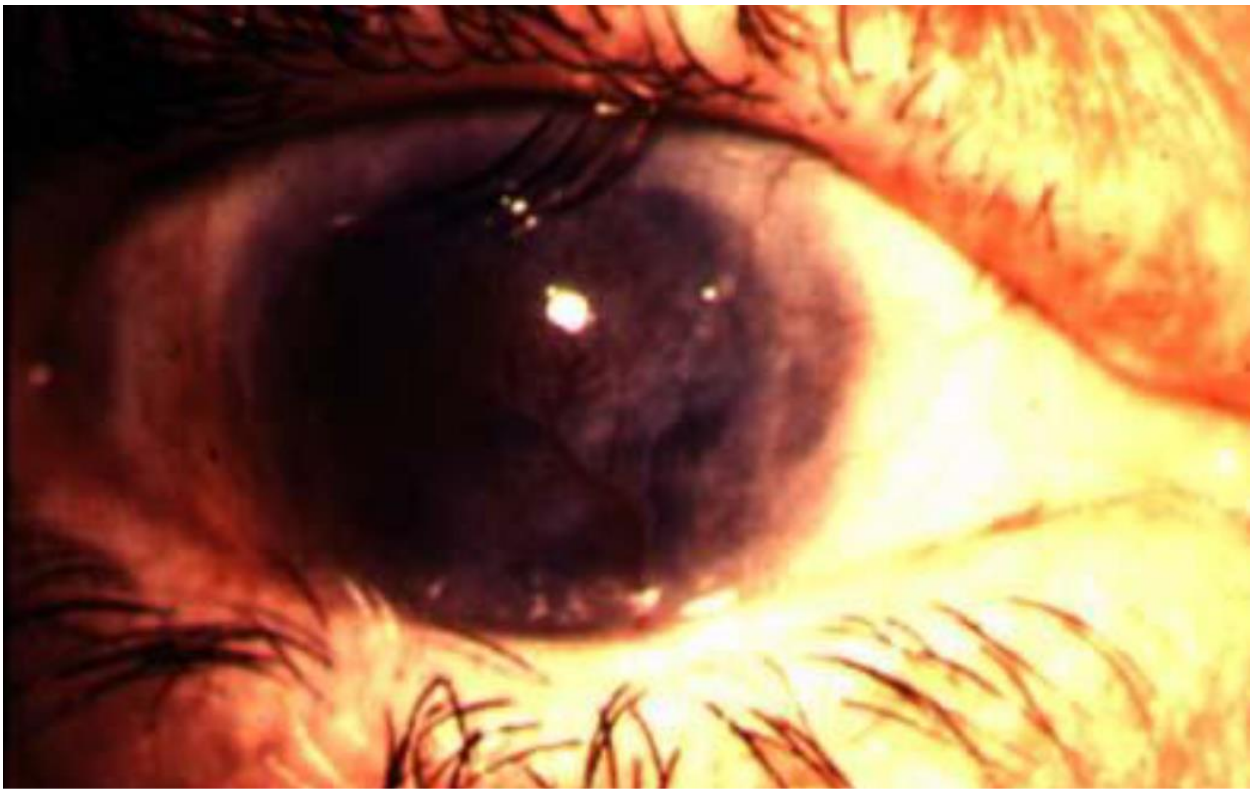

Same as above

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Diagnosis: Right lower eyelid entropion

There is telangectiasis (dilated blood vessels) in the lower eyelid denoting chronic inflammation (most probably, it is posterior blepharitis).

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Diagnosis: Senile ectropion – arcus senilis – dermatochalasis

ال dermatochalasis الجلد بيبقى عامل ترهلات بسبب ضعف الcollagen fibers ويبدأ يترهل وينزل من فوق ال eyelid فيعملك إحساس إن المريض عنده ptosis .. بس ده فعلا مش ptosis ولكن اسمه pseudoptosis

Pathophysiology: horizontal laxity + orbicularis weakness + strong retractors of lower eyelid.

Most serious complication: Exposure Keratopathy

Treatment? Surgical

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Diagnosis: Right blepharoptosis due to Horner's syndrome. (notice the constricted pupil in the right eye)

Causes for the disease: Pancoast tumor (Lung apex tumor) – carotid aneurysm

Is it congenital ? Yes, because of heterochromia which is seen only in Horner's syndrome before the 1st year of life.

Can we say that the picture represents Left lid retraction? why ?
No, we can't, because there is wrinkling of the forehead indicating active contraction of occipitofrontalis muscles which caused the retraction of the lids of the left eye, but it didn't cause retraction in the right eye due to ptosis.

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Diagnosis: Left congenital ptosis

How did you know ? Young age + no transverse crease

Treatment ? Surgical → if good levator function → levator resection

If poor levator function → Frontalis sling

Is it urgent ? why ?

It depends on the severity and bilaterality.

If severe (like this image), it is urgent to avoid sensory deprivation amblyopia.

If not severe but unilateral, it is urgent to avoid sensory deprivation amblyopia.

If not severe and it is bilateral, we wait until the school age because the growth of the eye may correct the ptosis (partially).

If there is a congenitally associated squint, it will be ? Right Hypertropia (left hypotropia) due to left superior rectus palsy.

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Diagnosis? Lower eyelid chalazion

Predisposing conditions ? Dry eye, Meibomian gland dysfunction (posterior blepharitis), abnormal lipid profile…

Treatment ? If not secondarily infected, → Hot foments

If secondarily infected (internal hordeolum) → it is an abscess so incision and drainage must be performed

Mention 2 ways by which the chalazion may interfere with the vision.

1- Upper eyelid chalazion may cause mechanical ptosis
2- Upper eyelid chalazion may cause astigmatism with the rule due to compression on the vertical meridian of the cornea rendering it more curved.

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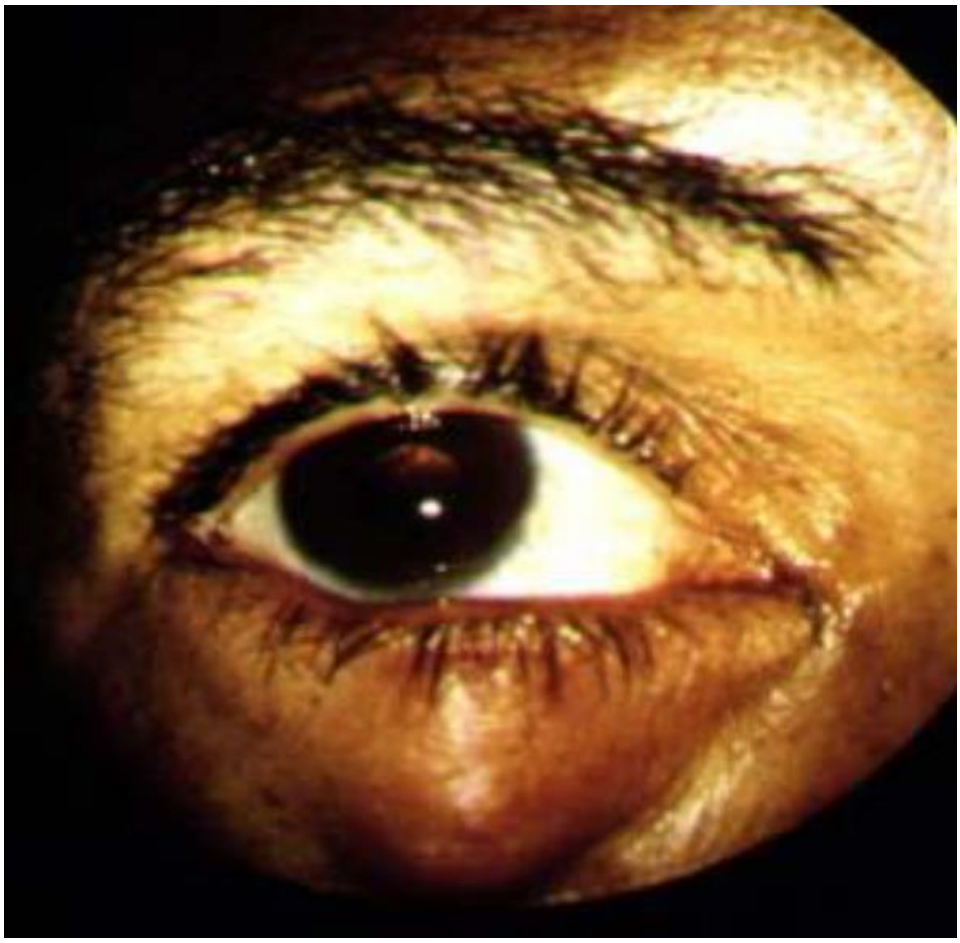

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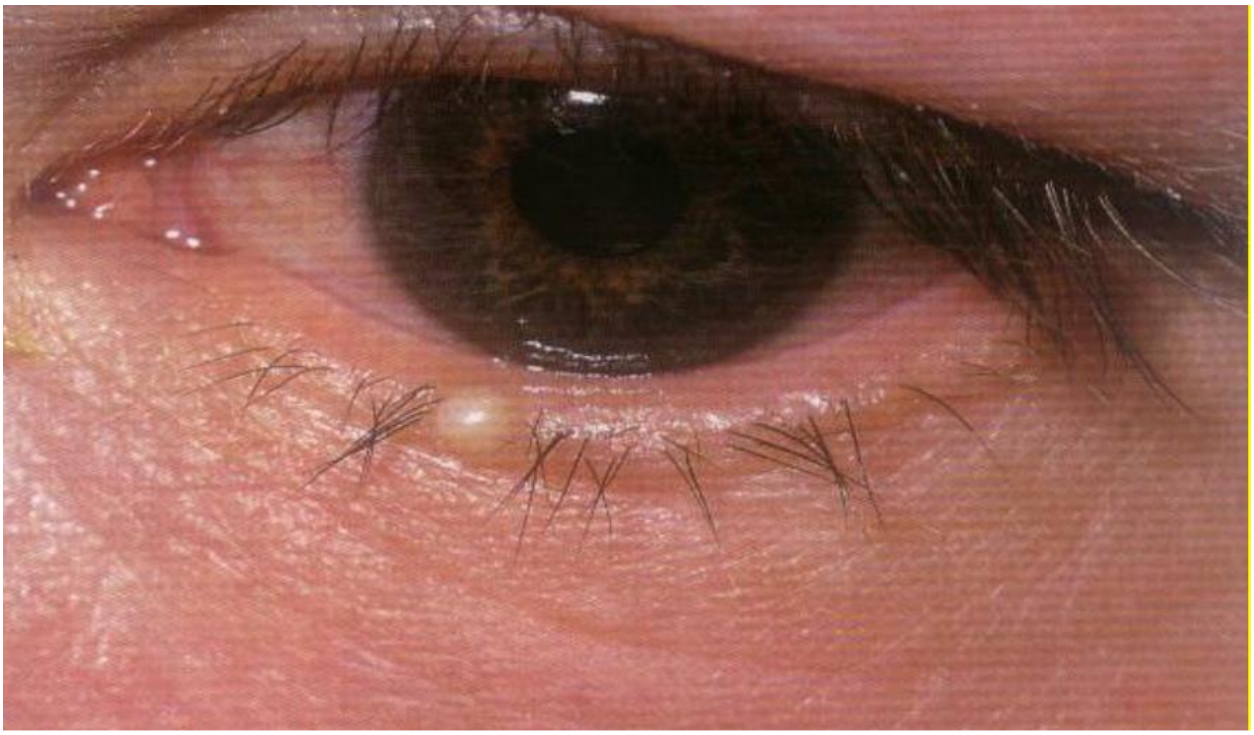

Diagnosis: Marginal Chalazion (chalazion arising from the glands of zeis) = moll of zeis = retention cyst

We didn't say it is a stye, because it is not arising from the hair follicle (no hair above it) and because of the absence of the cardinal signs of inflammation.

Treatment: shaving with no anesthesia.

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Diagnosis: Xanthelasema

Workout ? Lipid profile

Systemic disease ? Hyperlipidemias – DM

Treatment? Metabolic control + surgery

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Diagnosis: Eyelid papilloma

Diagnosis: Basal Cell Carcinoma (single, large irregular outline – dirty – raised and everted edges)

Afandina 2020 /2021

Diagnosis: Lacrimal sac abscess = Acute dacrocystitis with pus formation

Predisposing condition ? Congenital nasolacrimal duct obstruction

Treatment: it is an abscess, so incision and drainage then treat the congenital nasolacrimal duct obstruction.

Outline the treatment of congenital NLD

- Before the age of one year → digital massage
- After the age of one year → probing → if failed, do it again
- If the second probing failed → intubation
- If intubation failed → Dacrocystorhinostomy (DCR)

Note: In adults, the treatment of nasolacrimal duct obstruction is by DCR. The other methods are of no value. Probing in adult is a diagnostic tool (not therapeutic).

Afandina 2020 /2021

Diagnosis? Subconjunctival Hemorrhage

Causes: - the most common cause is idiopathic

- Heomrrhagic Viral Conjunctivitis
- Bleeding disorders
- Trauma to the eye
- Fracture base of the skull
- After extraocular surgeries

Treatment: Self-limited

Causes of Viral Hemorrhagic Conjunctivitis:-

- **Enterovirus 70**
- **Coxsackie A 24**
- **Apollo virus**
- **New castle virus**

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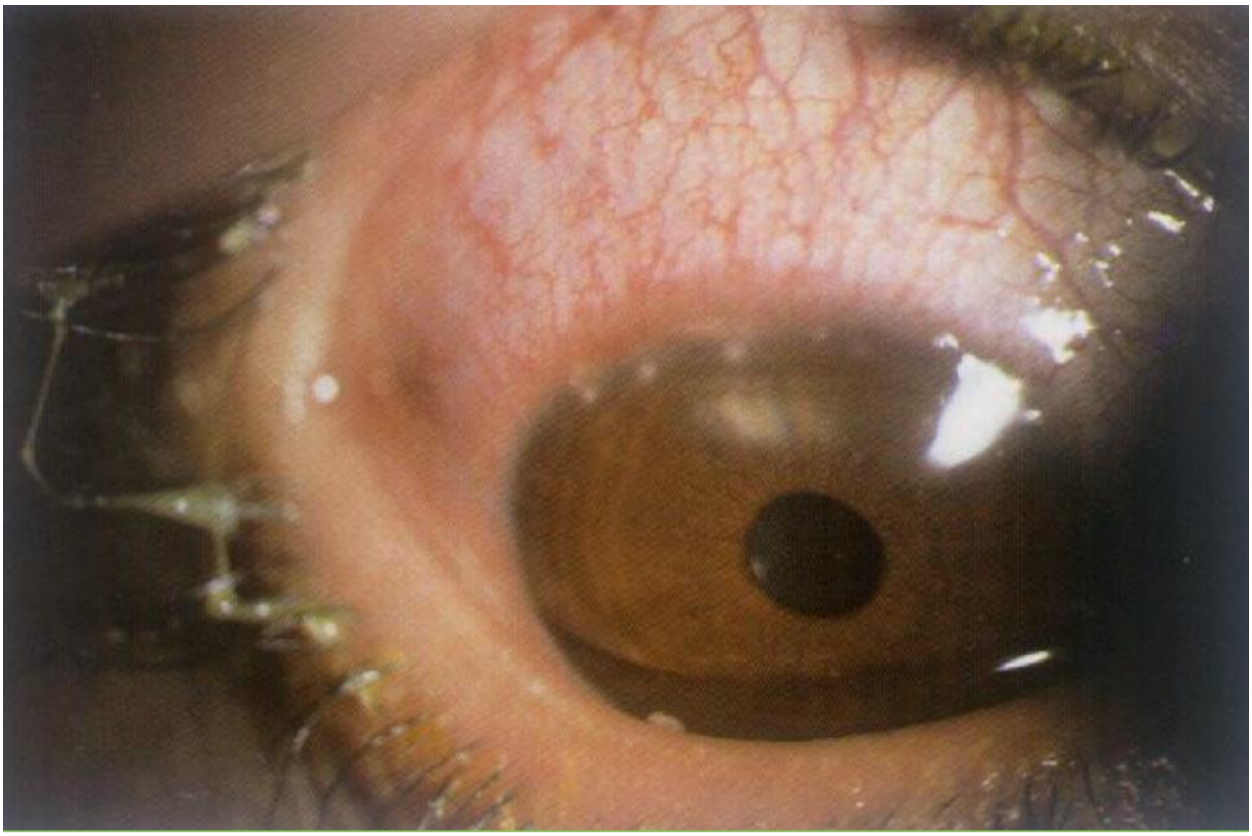

Diagnosis: Active Trachoma

Findings ? Trachomatous Pannus + Herbert's Rosettes

Treatment ? Azithromycin

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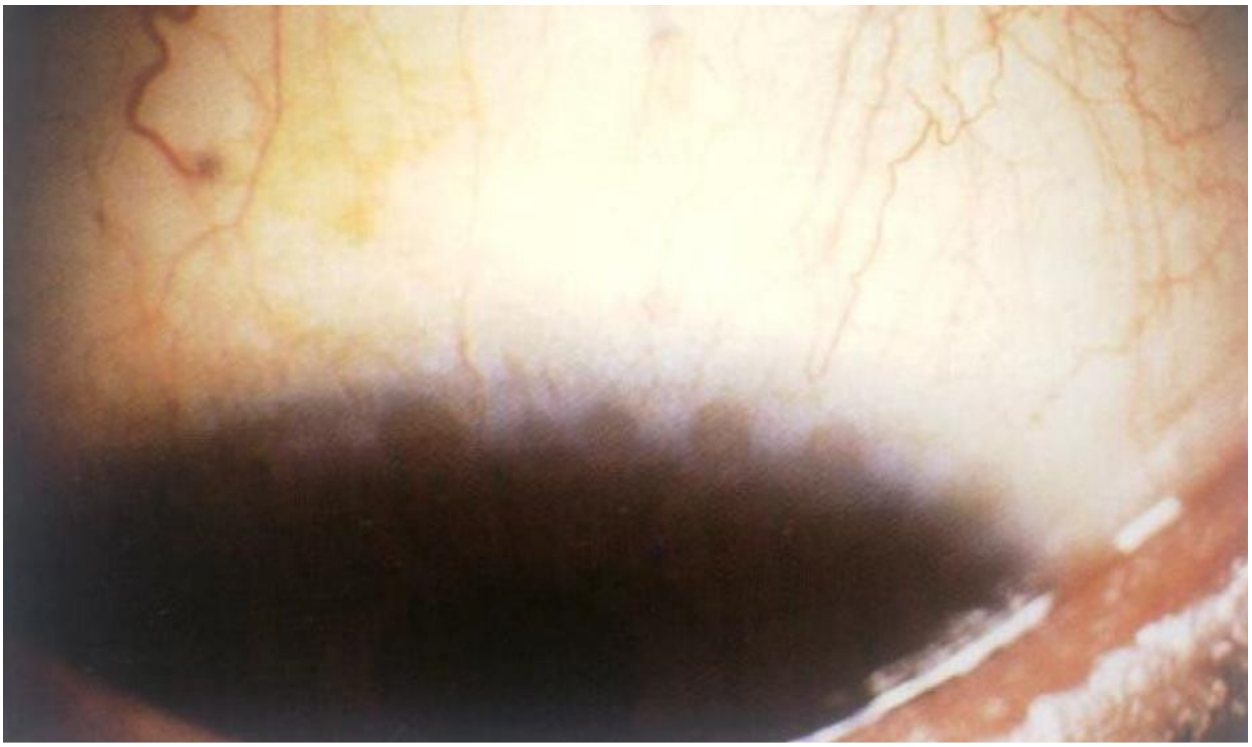

Diagnosis: Healed Trachoma (cicatrized)

Findings? Trachomatous Nebula Ex Pannus + Herbert's Pits

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Diagnosis: Giant Papillae (Cobble-stone appearance)

If this child had an allergic disease, it is ? Vernal Keratoconjunctivits (Spring Catarrah)

The most important symptom is ? SEVERE itching

Type of discharge? Ropy

Corneal involvement: Tranta's spots and Keratitis superficialis vernalis
The drug that should be controlled / used with caution: Steroids

Causes of deterioration of vision in this child?

1- Keratoconus
2- Steroids-induced cataract
3- Steroids –induced glaucoma
4- Keratitis

N.B. Systemic Steroids → more cataract than glaucoma
Local Steroids → more glaucoma than cataract

Differential Diagnosis of Giant Papillae:

1- Vernal Keratoconjunctivitis .
2- Giant Papillary Conjunctivitis in contact lens users and artificial eyes.

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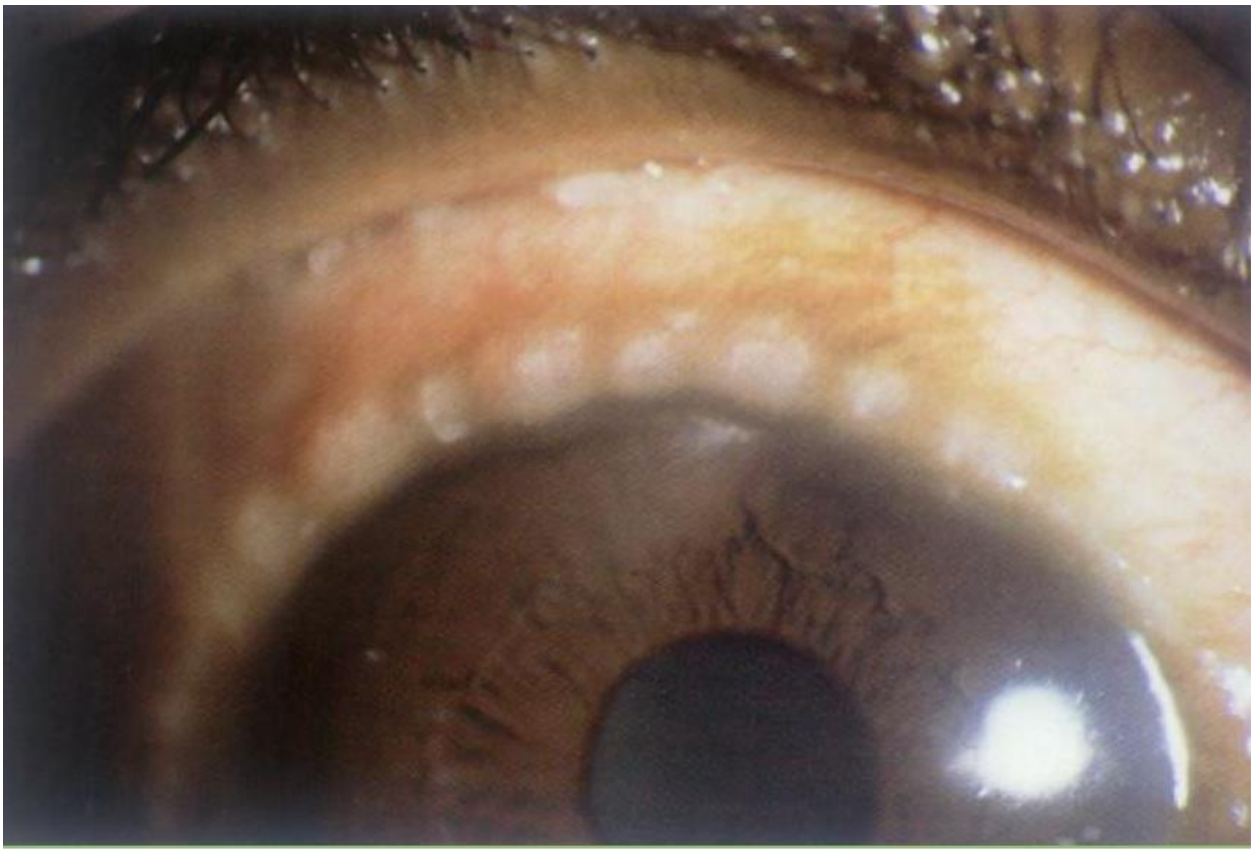

Diagnosis: Limbal Vernal Keratoconjunctivitis

Findings? Gelatinous deposits with Tranta's spots

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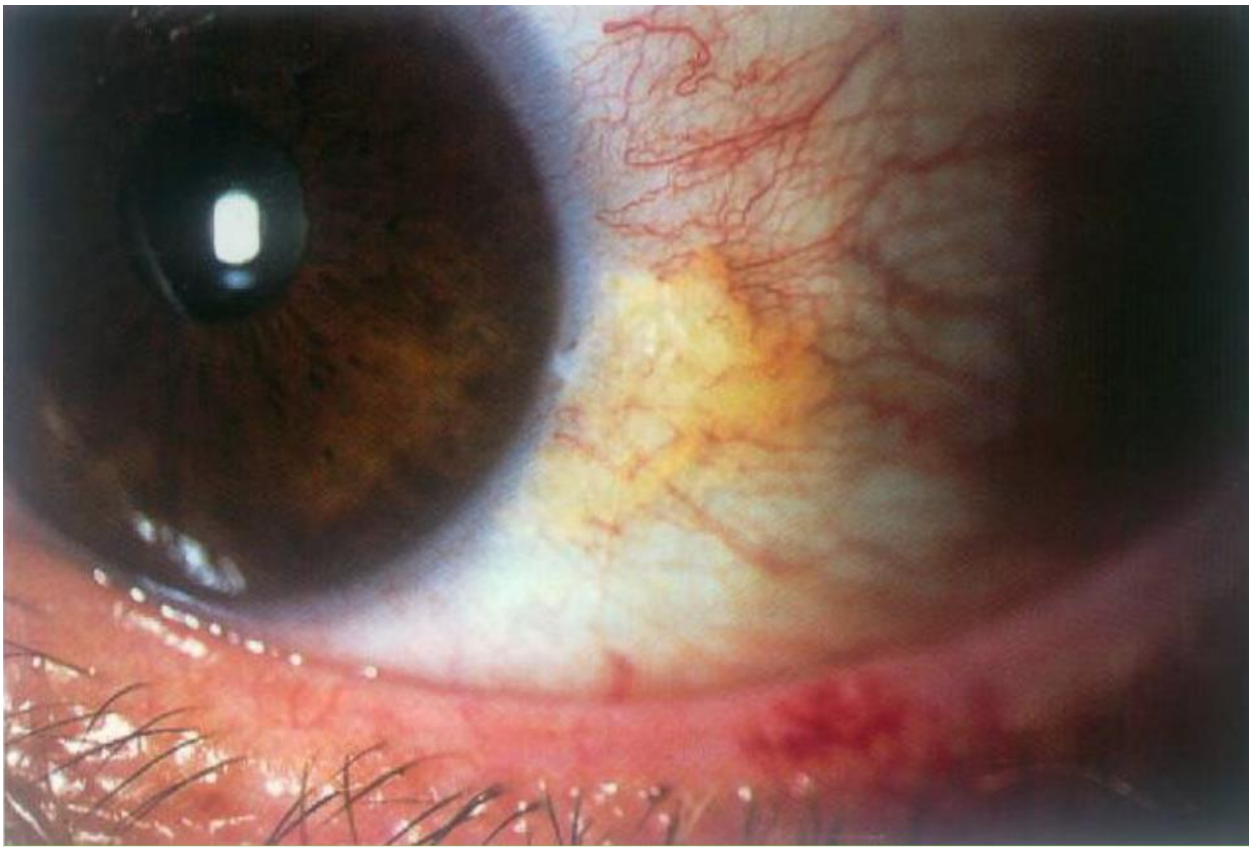

Diagnosis: Bitot's Spot

Cause: Vit. A deficiency

Association: Dry eye

Afandina 2020 /2021

Diagnosis: Pterygium

Pathophysiology: elastoid degeneration in the conjunctiva

Risk factor: exposure to UV rays

How does it affect vision ?

1- Covers the pupil
2- Flattens the horizontal meridian of the cornea → astigmatism with the rule

Other complications ?

- Cosmetic
- Lagophthalmos → Dry eye

How to prevent recurrence ?

1- Conjunctival autograft
2- Amniotic graft
3- Mitomycin C

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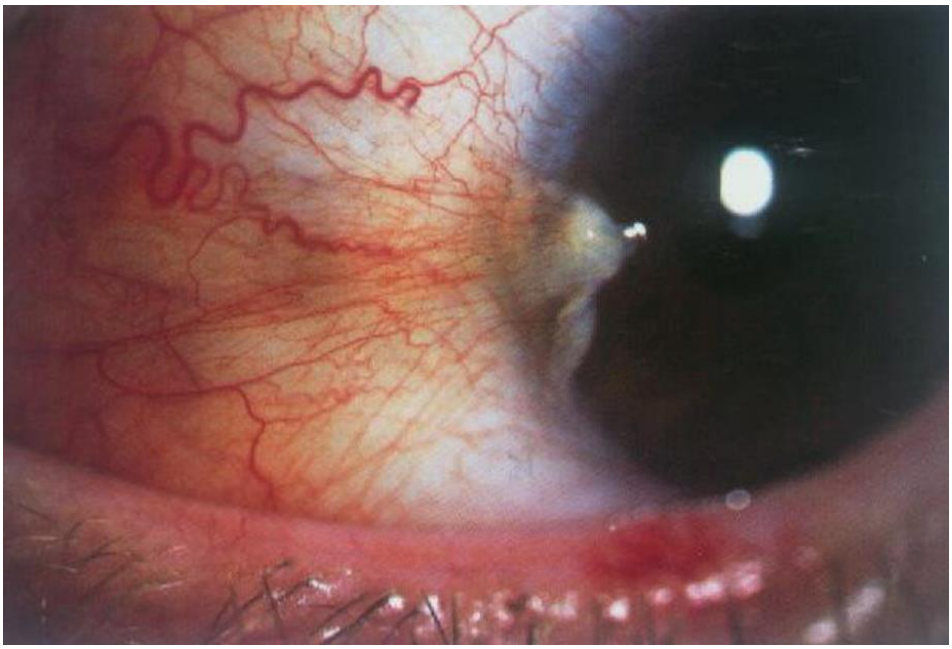

Same as above

What is pseudopterygium ?

it is conjunctivitalization of the cornea

How to differentiate pseudopterygium from true pterygium ?

by Hook test

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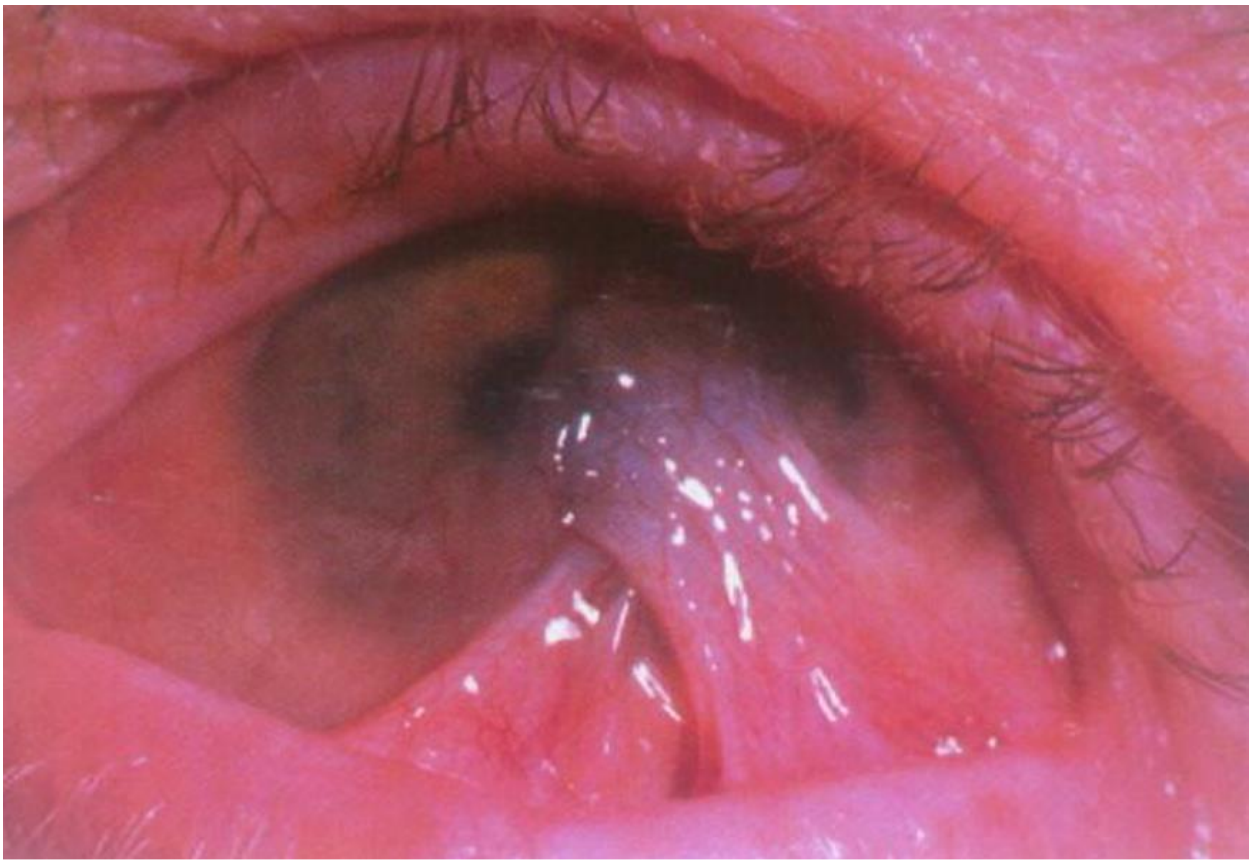

Diagnosis: Symblepharon

2 most common causes ?

1- Chemical burns
2- Ocular Cictricial Pemphigoid (OCP)

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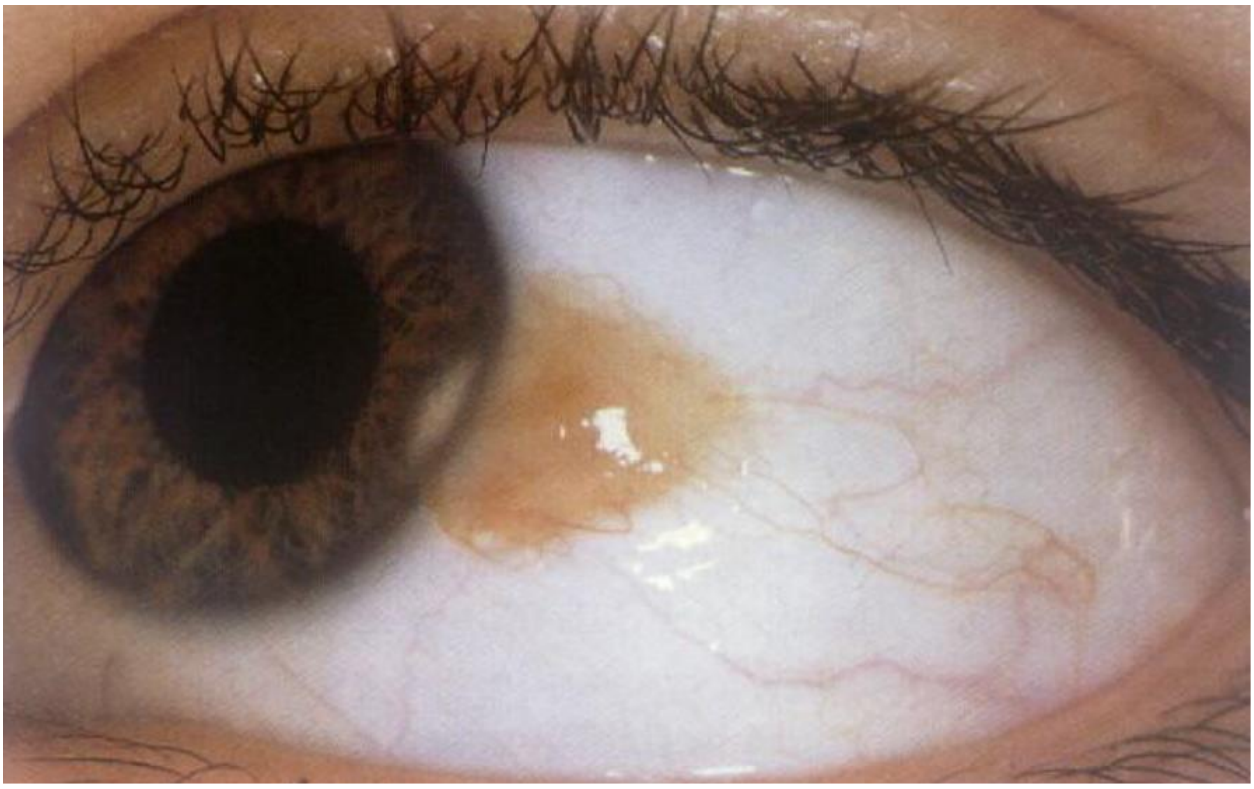

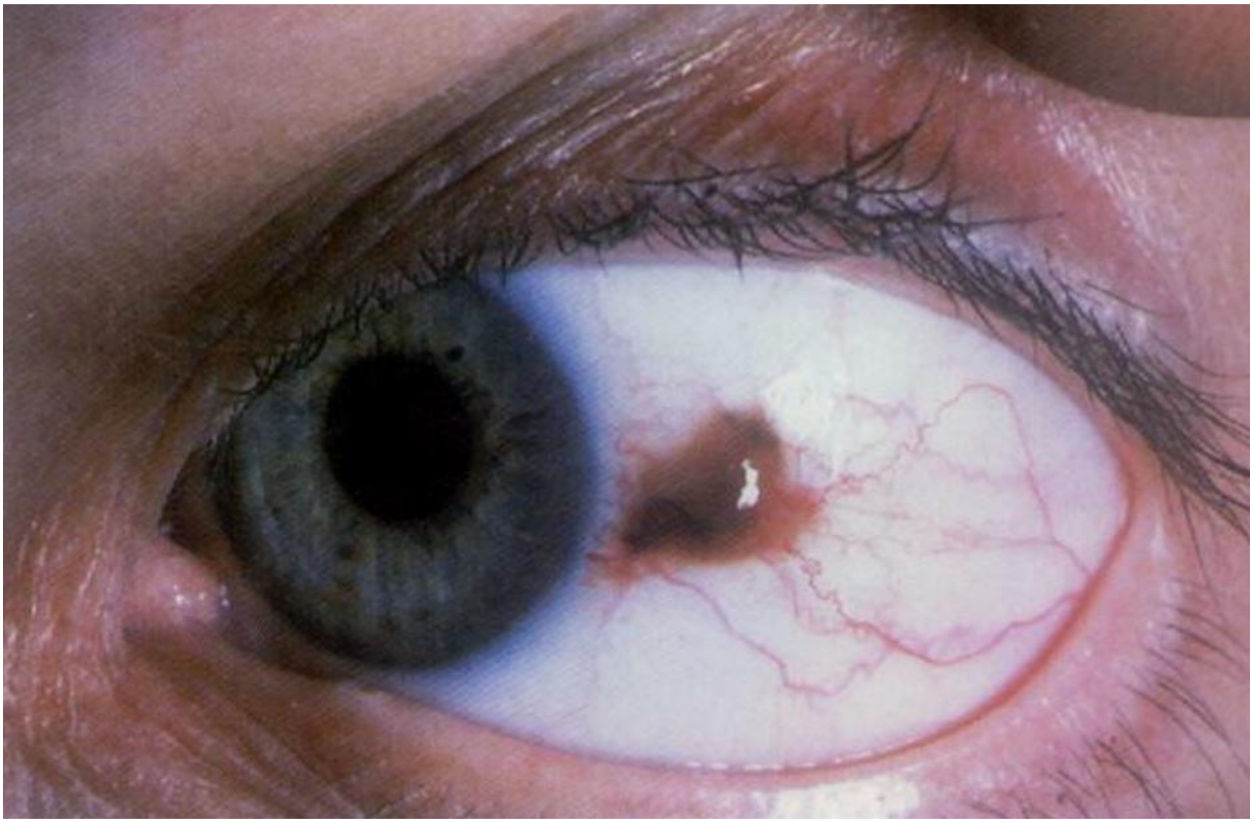

Diagnosis: both are Nevi. The 2nd image is more pigmented and more vascularized and requires proper evaluation and follow up

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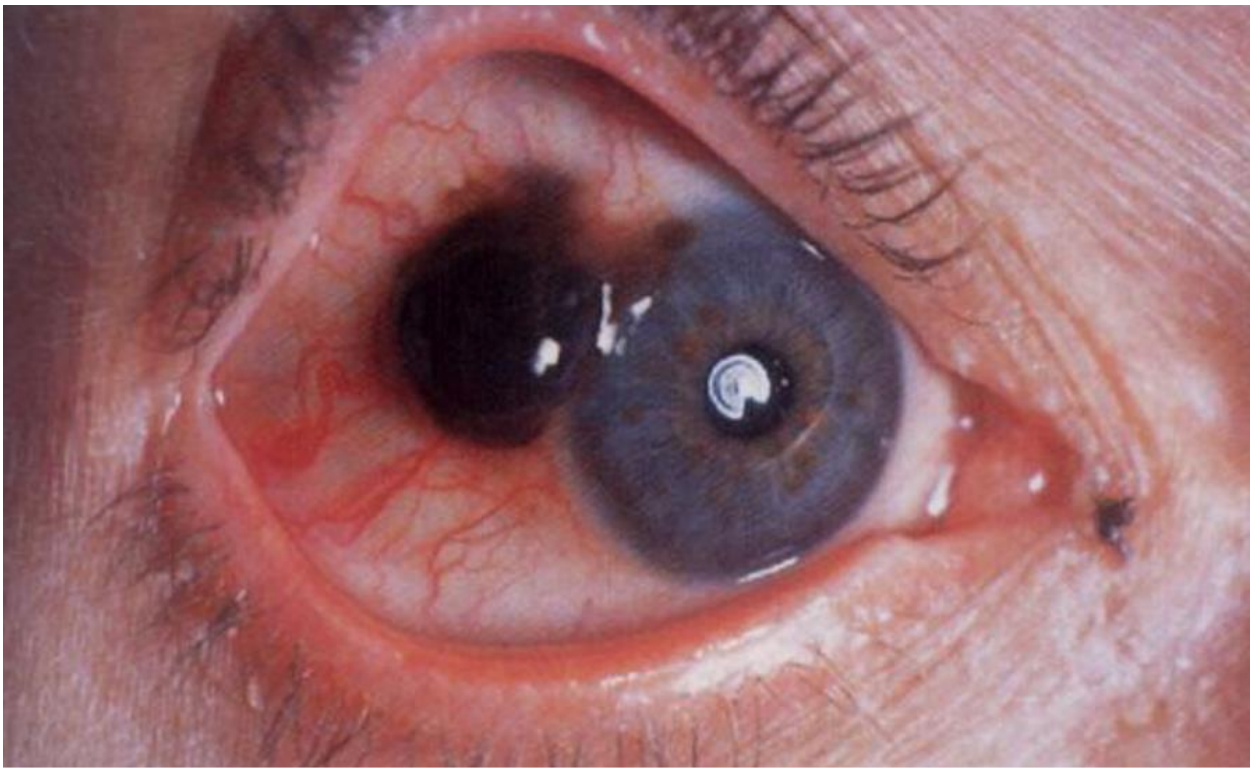

Diagnosis: Malignant Melanoma

Findings that suggest your diagnosis ?

1- Large and encroaching on the cornea
2- Highly pigmented
3- Highly vascularized

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Diagnosis: Corneal Opacity

Differential diagnosis:

- Corneal ulcer
- Leucoma
- Chemical burn
- Corneal dystrophy

Test used to diagnose ulceration ?

Fluorescein Staining test

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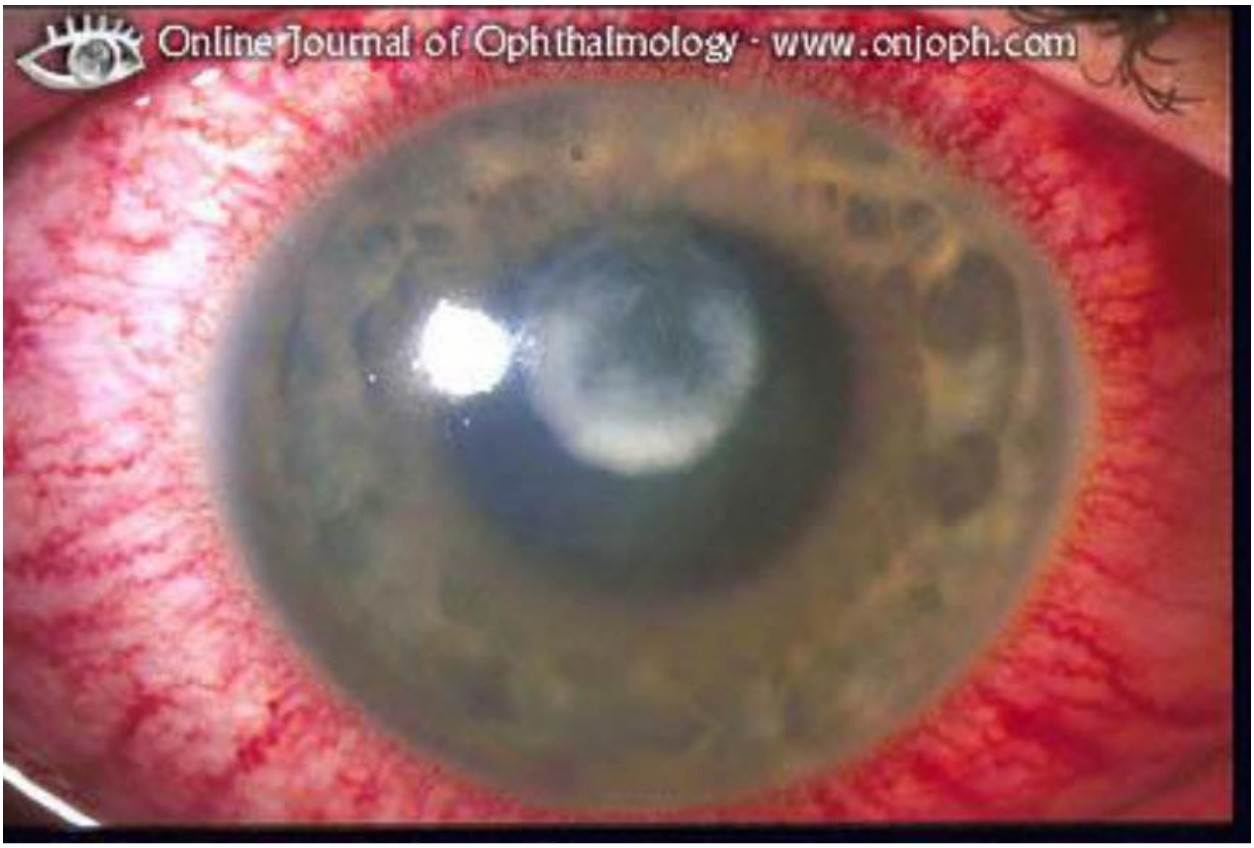

Diagnosis: Corneal Ulcer (most probably is Acanthamebic)

Risk factor: Contact lenses

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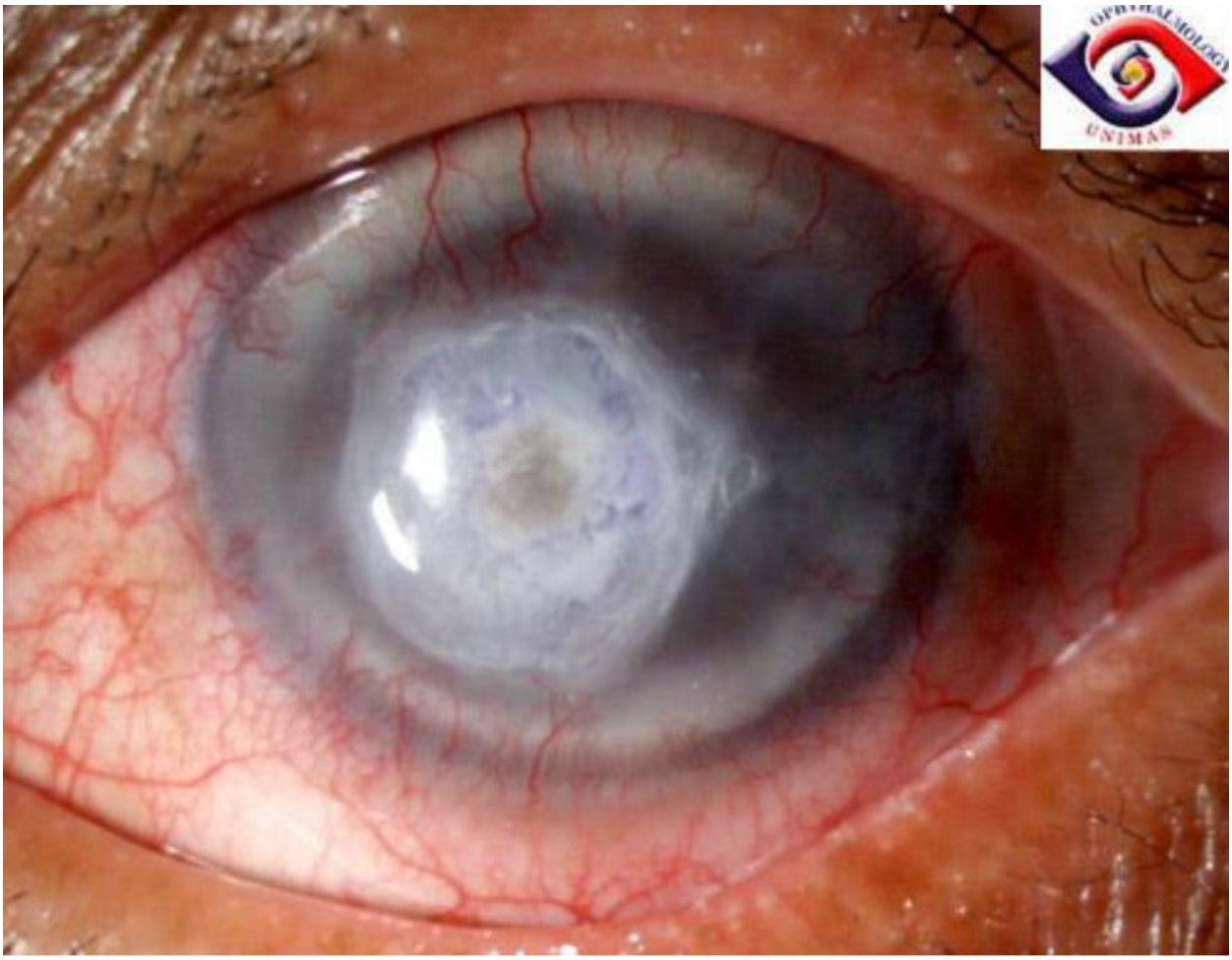

Diagnosis: Vascularized corneal opacity

Treatment ? success ? why?

Keratoplasty is the treatment of choice. However, the rejection risk is very high due to vascularization.

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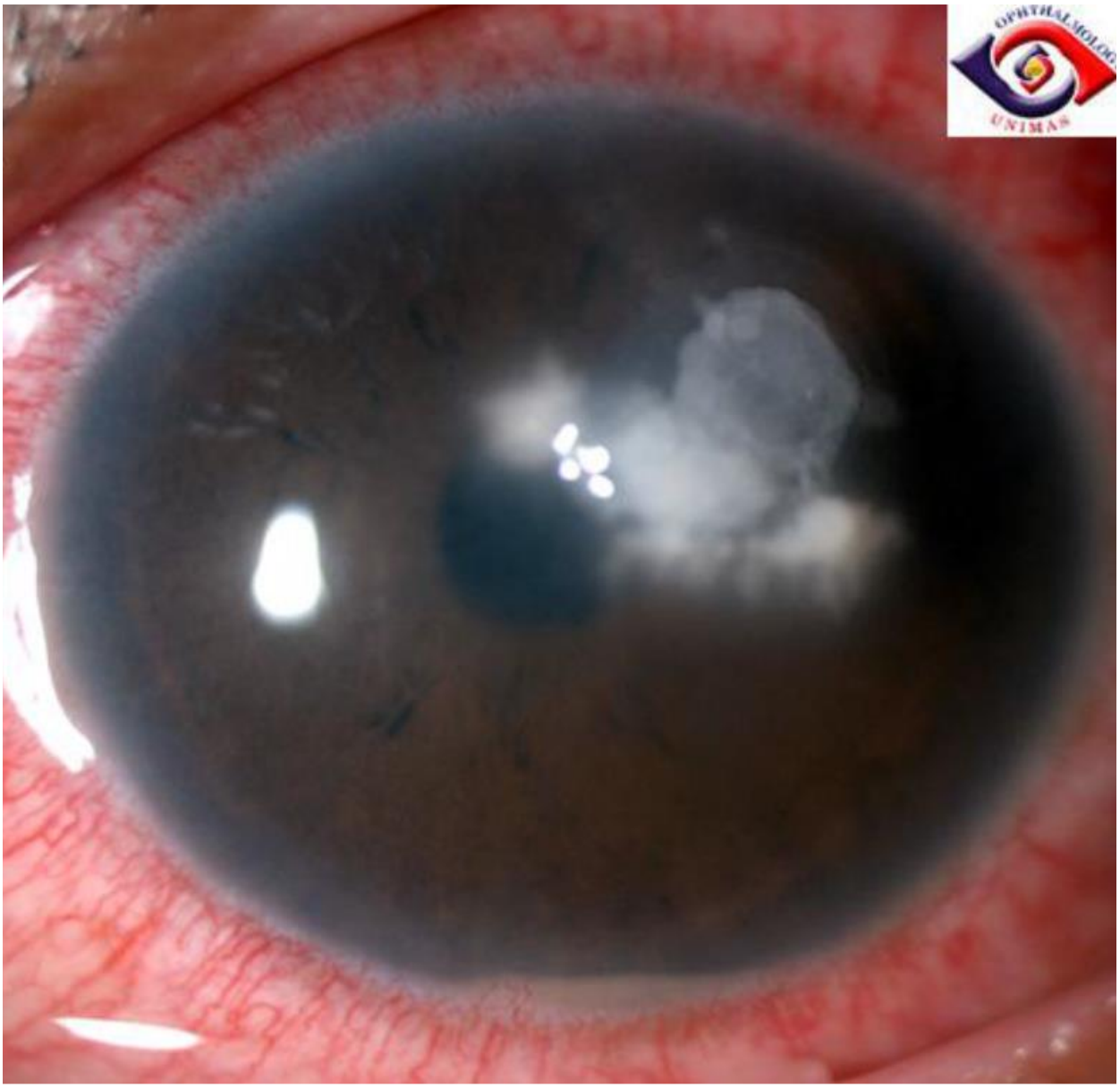

Diagnosis: Hypopyon Corneal Ulcer

Most common organism ? Pneumococci

Most common predisposing condition ? Chronic dacrocystitis

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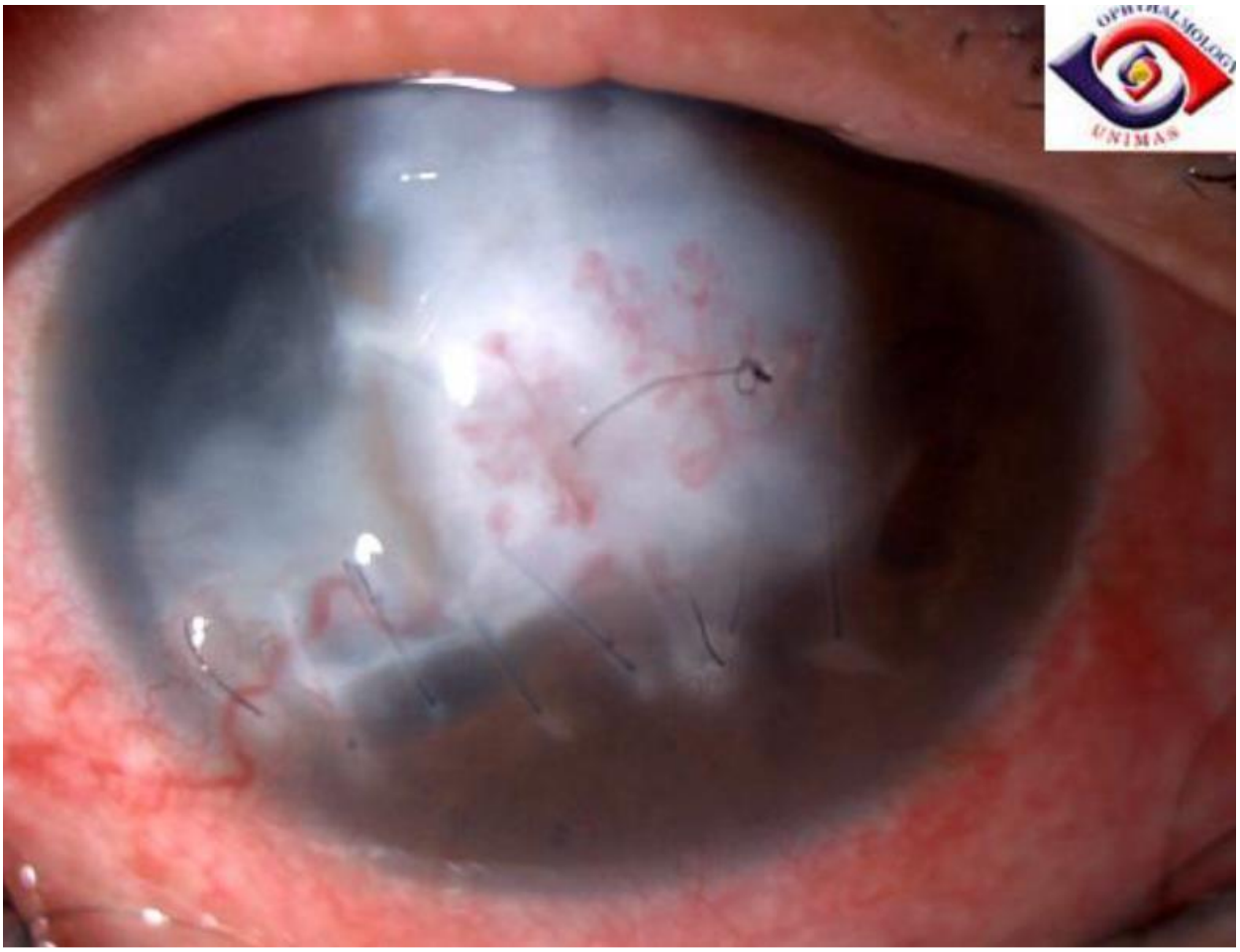

Diagnosis: Corneal opacity following suturing of a rupture

Treatment ? success ? why?

Keratoplasty is the treatment of choice. However, the rejection risk is very high due to vascularization.

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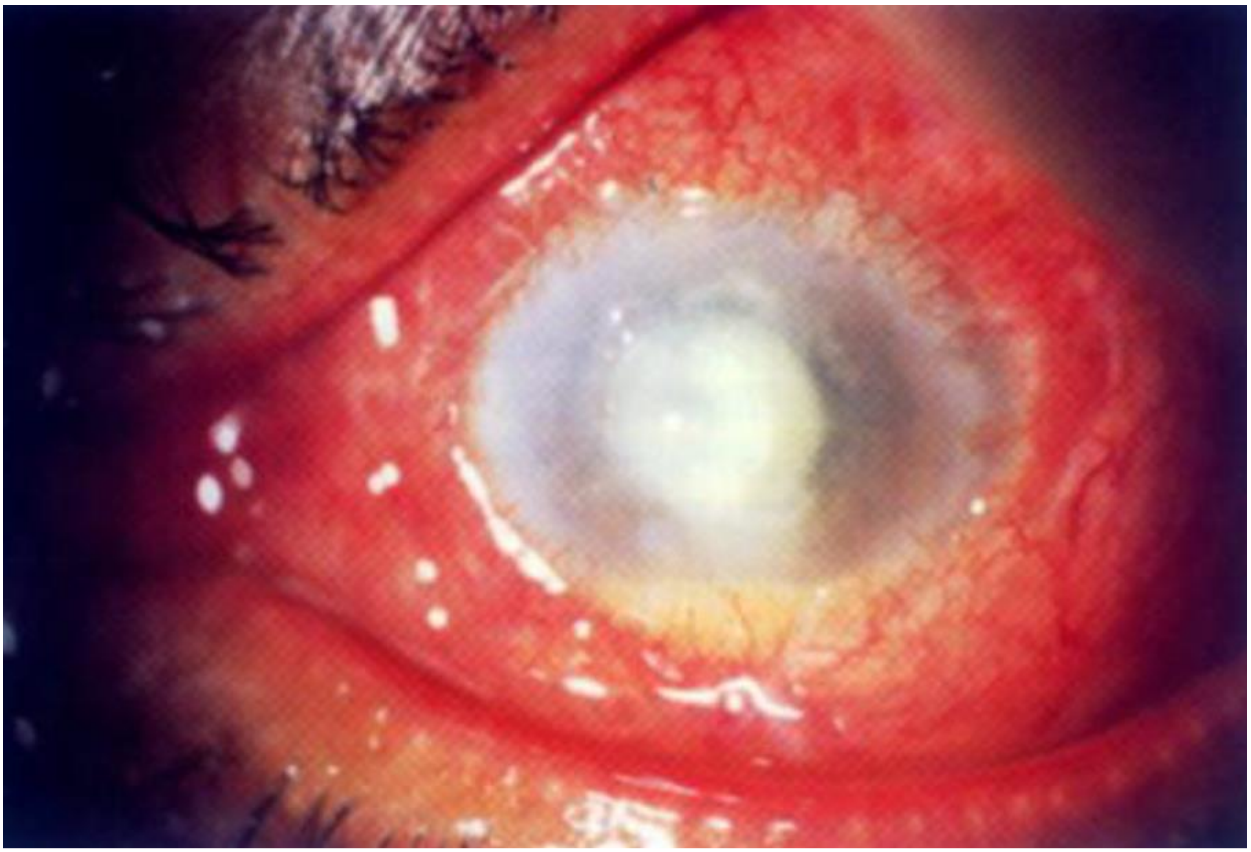


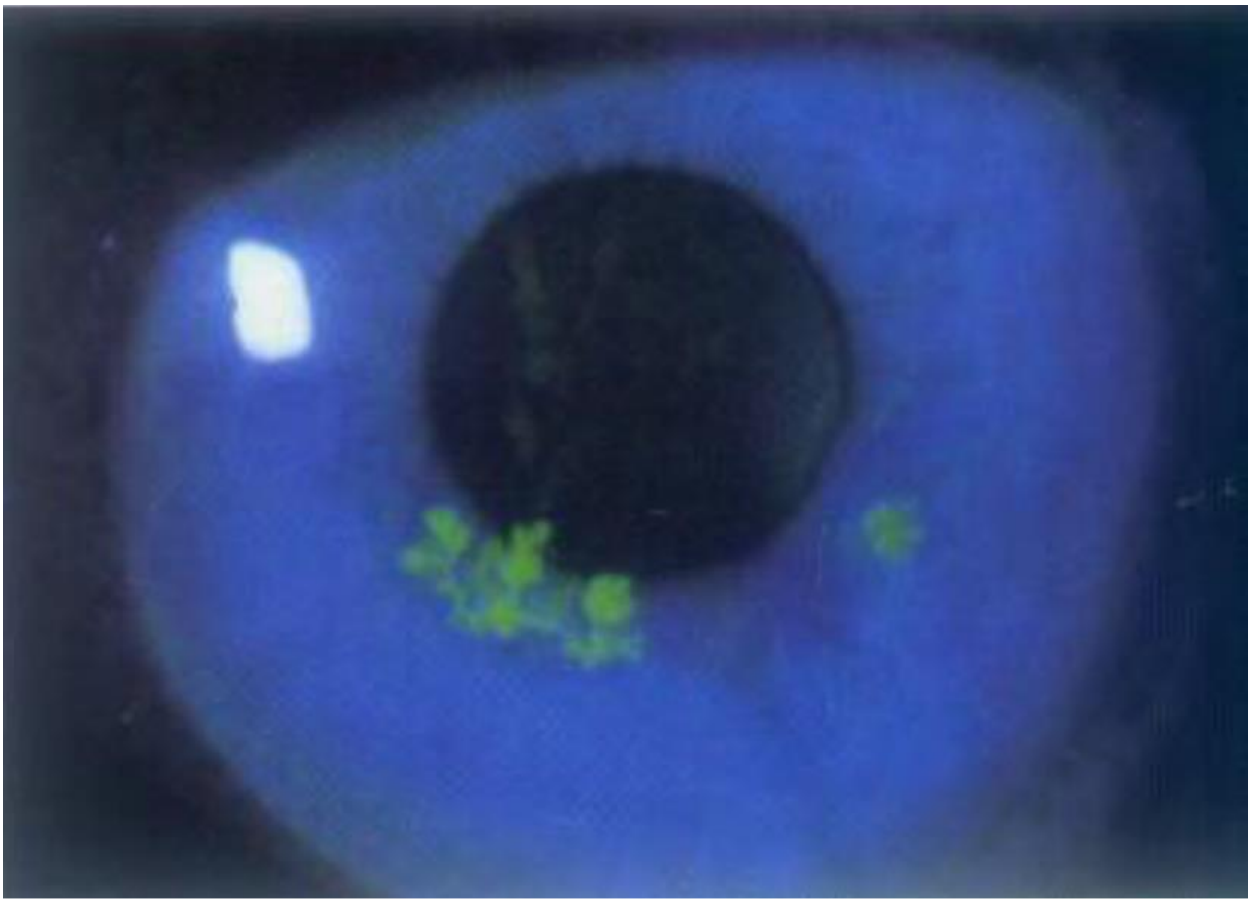
Diagnosis: post-operative endophthalmitis

Findings? Severe injection – corneal opacity – hyopopyon

Treatment ? Early → intravitreal antibiotics

Not responding → vitrectomy

No PL → Evisceration (never enucleation)



Diagnosis: Herpes Simplex corneal ulcer stained by fluorescein and viewed by cobalt blue illumination

Diagnostic criteria ??

1- Dendritic in shape
2- Recurrence
3- Corneal Hypothesia

Difference between Herpes simplex and Herpes zoster:-

1- **Herpes zoster causes corneal anesthesia .**
2- **Herpes zoster affects any structure in the eye, including the retina .**
3- **Vesicles of herpes zoster respect the midline.**
4- **Systemic Acyclovir is mandatory in herpes zoster.**

N.B. Vesicles on the tip of the nose are pathognomonic for Herpes zoster → Hutchinson's sign

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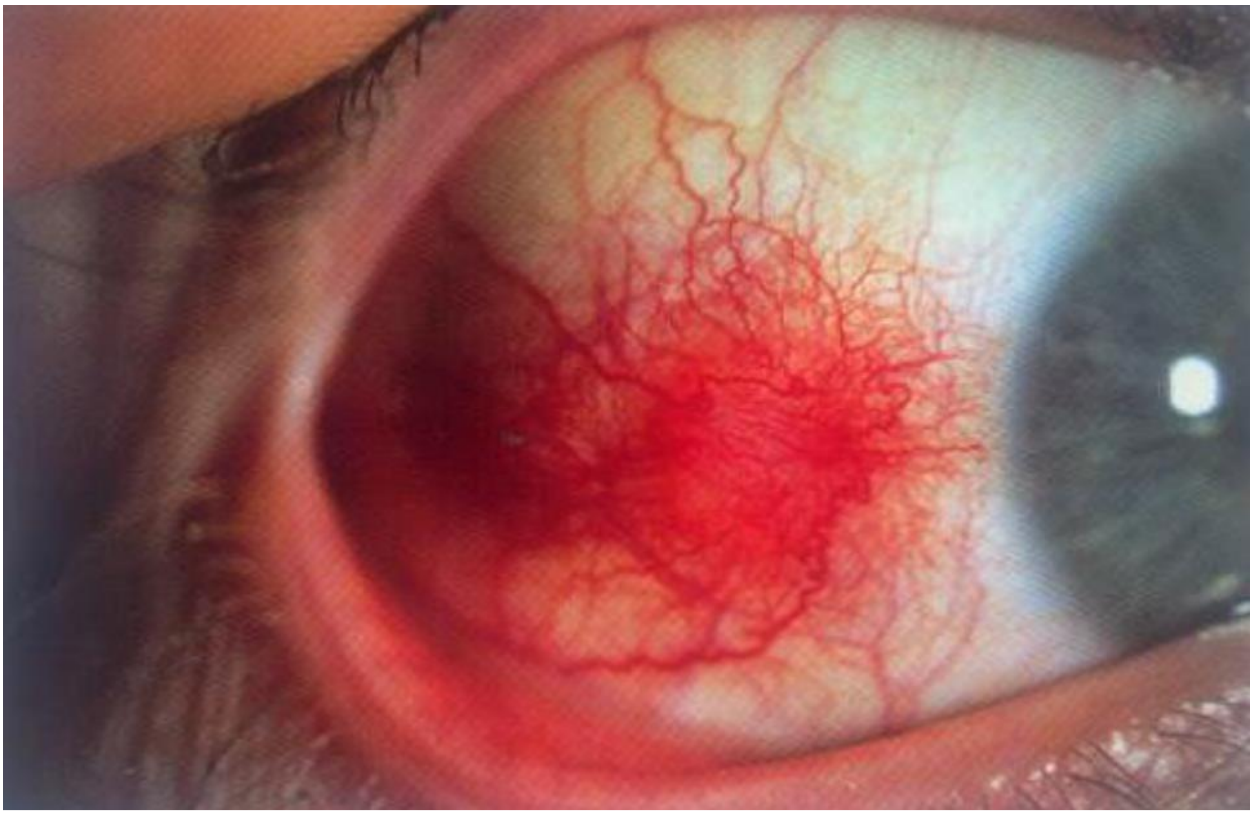

Diagnosis: Scleritis

Lab. Investigations ? Autoimmune assays

Treatment ? Steroids

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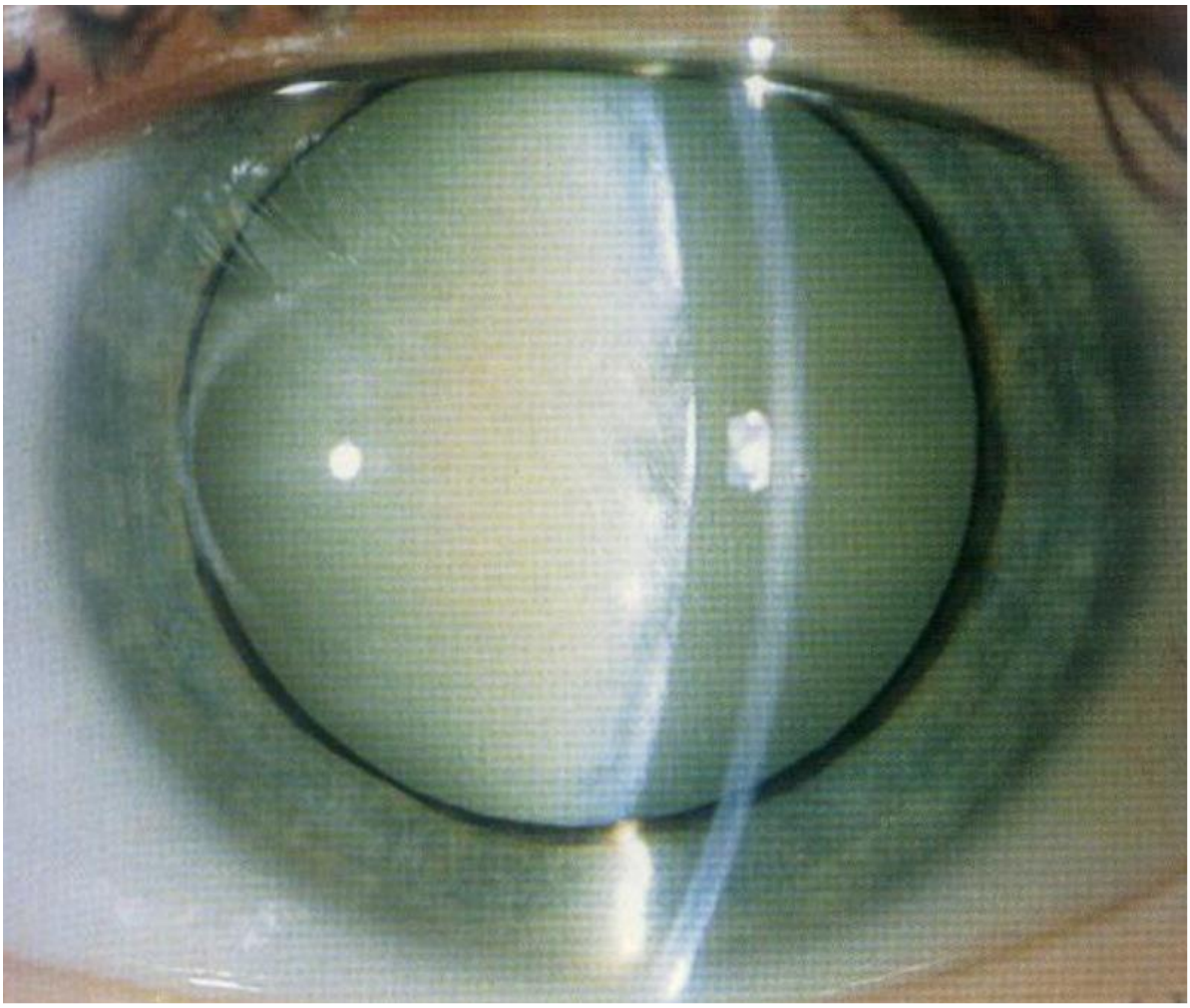

Diagnosis: White Cataract

2 investigations ?

1- B scan ultrasonography
2- Biometery

Visual Acuity of this patient ? Not less than hand motion

If it is less than what you have answered and the previous question, what is the most likely cause? Posterior segment disease

How to examine central retina in this patient ? by color perception

How to examine peripheral retina in this patient ? by light projection

How to examine the field for this patient ? by light projection (not confrontation)

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Diagnosis: Mature Cataract

Same as above

Treatment ?

1- Phacoemulsification + foldable acrylic IOL
2- Extracapsular cataract extraction (ECCE) + PMMA IOL

Complications

- Most common intraoperative: vitreous loss
- Most serious intraoperative : expulsive hemorrhage
- Most common postoperative: after cataract (posterior capsular opacification)
- Most serious postoperative: Endophthalmitis

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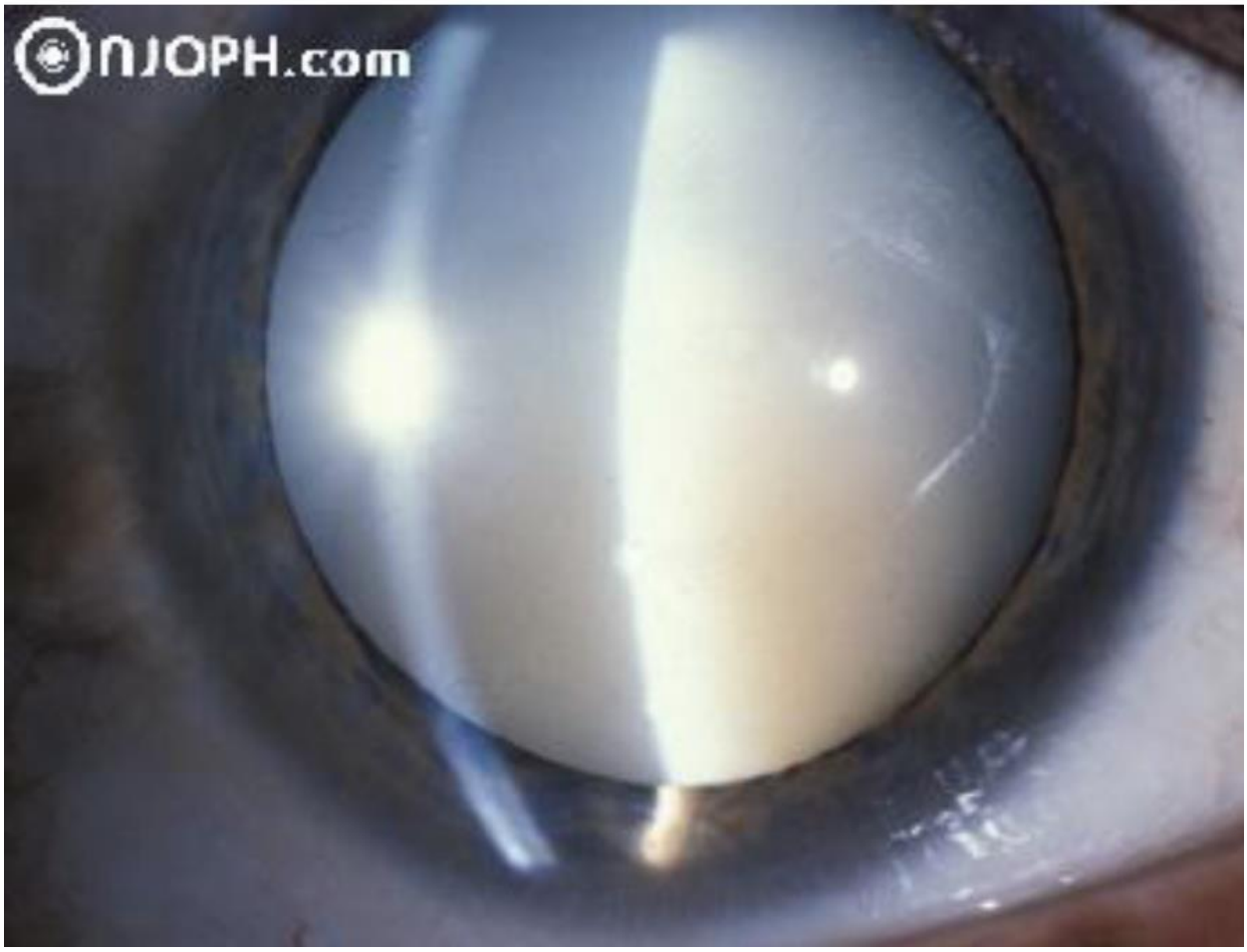

Same as above

How to manage PCO ?

By Yag Laser Capsulotomy

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Diagnosis: Immature Cuneiform Senile Cortical Cataract

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Diagnosis: Nuclear Cataract

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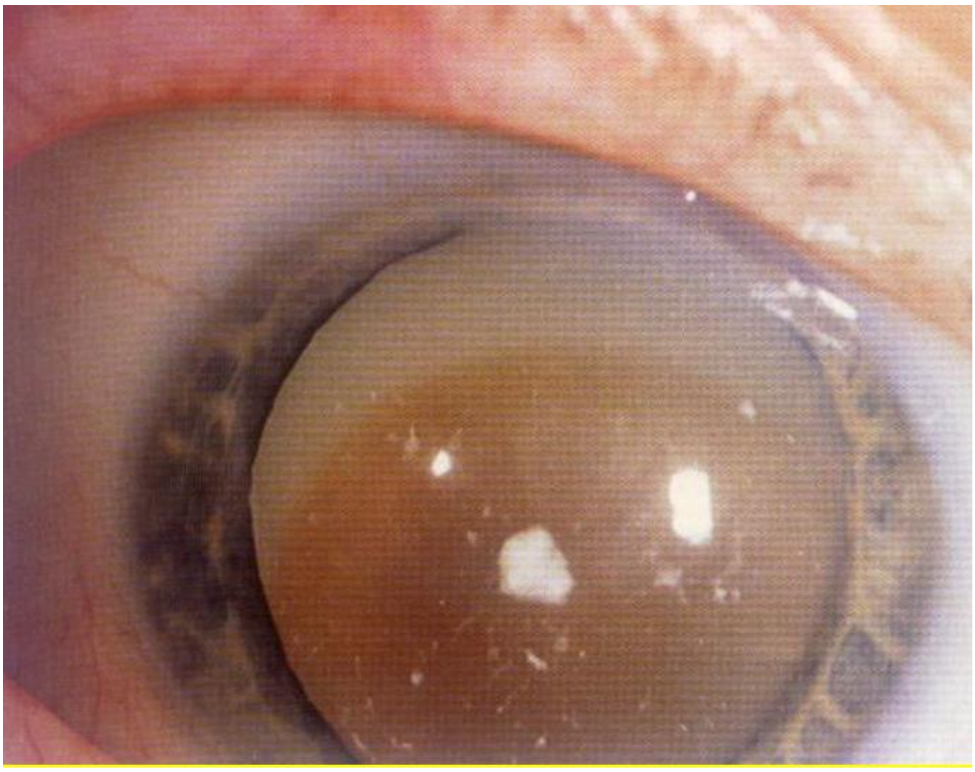

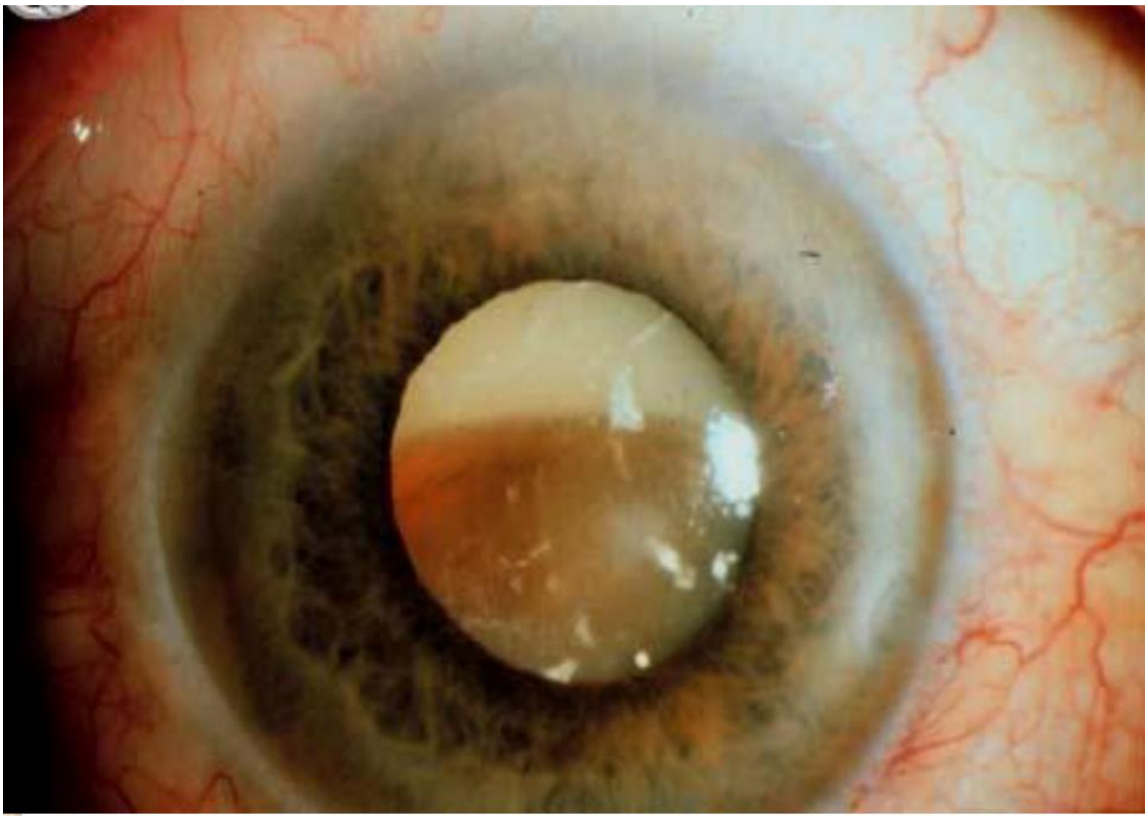

Diagnosis: both are Hypermature Morgagnian Cataract

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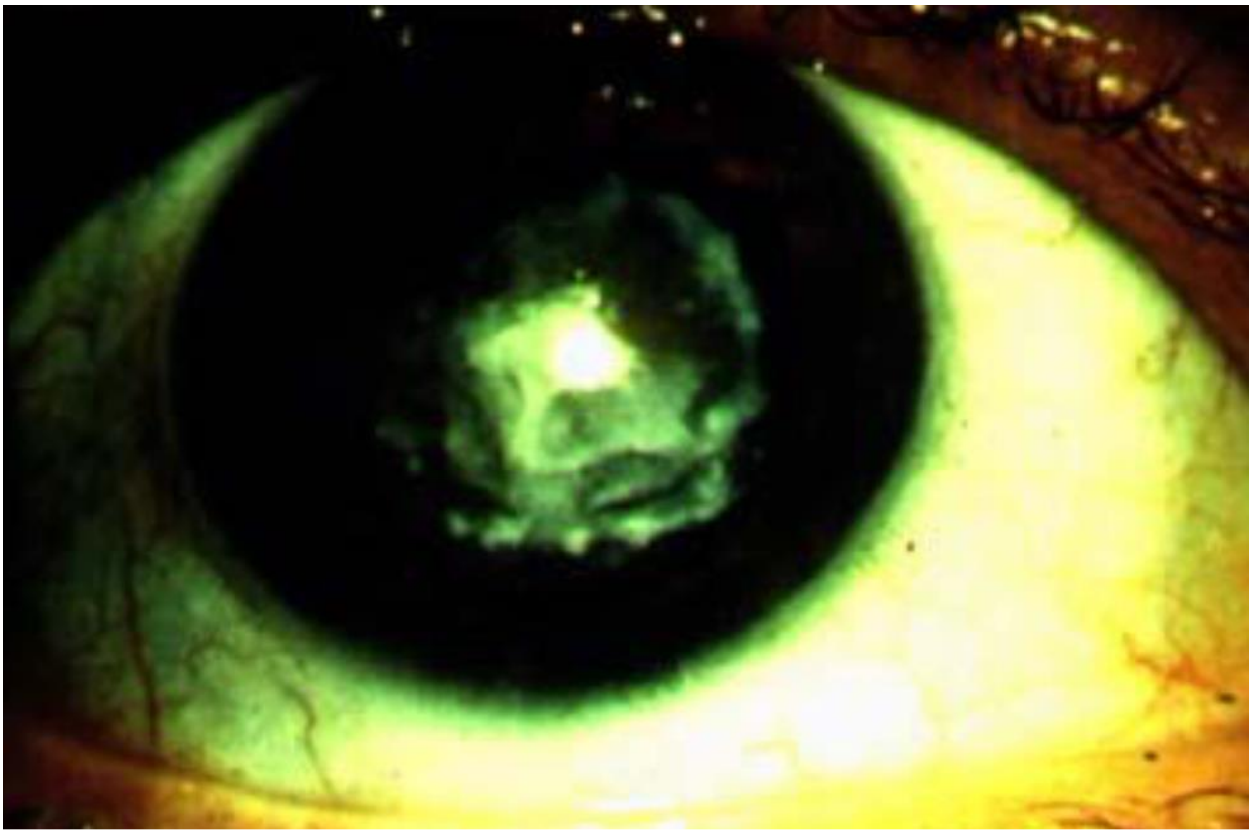

Diagnosis: Shrunken Cataract

ال lens صغيرة ومكرمشة على نفسها

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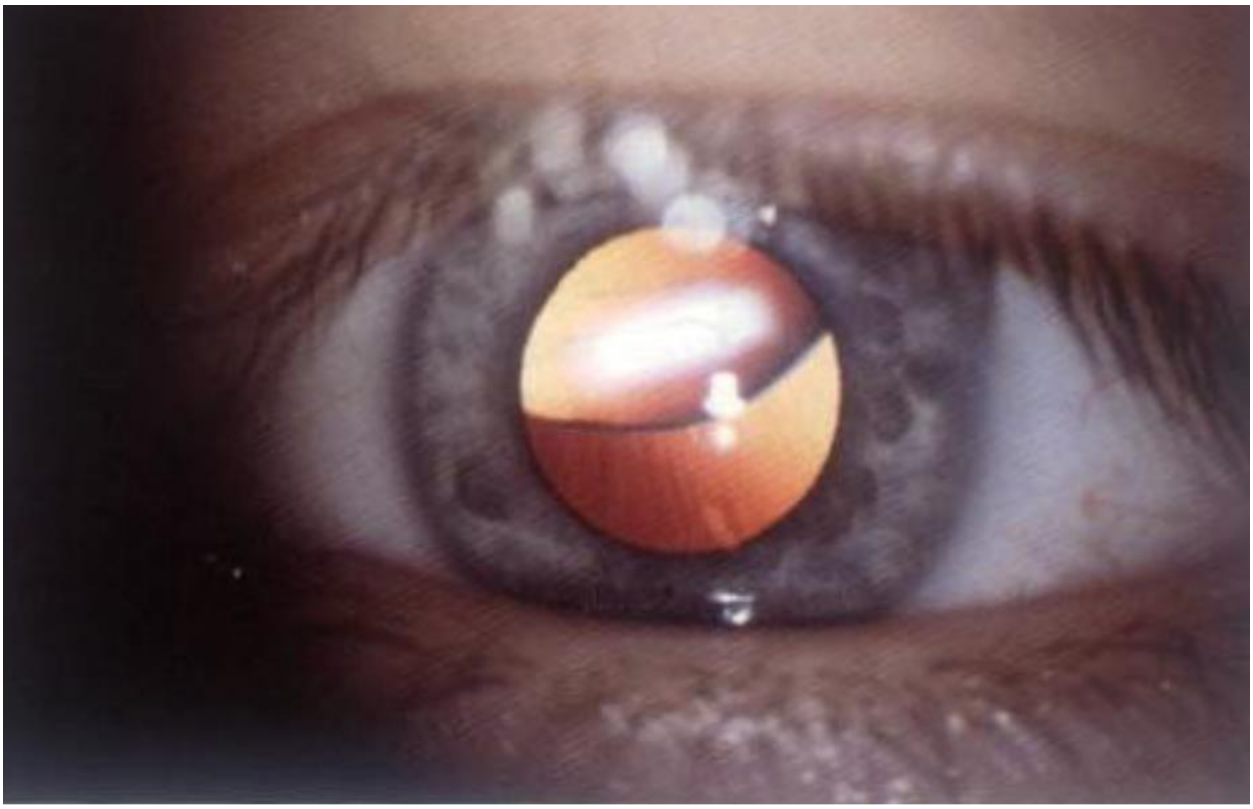

Diagnosis: subluxated crystalline lens

Symptom ? monocular diplopia

Causes?

1- Marfan Syndrome (subluxated upward and temporally)
2- Weil Marchesani (subluxated downward and nasally)
3- Homocystinuria
4- Ehler-Danlos Syndrome
5- Trauma

N.B. Marfan could be life-threatening due to aortic aneurysm.

Treatment ?? Intracapsular lens extraction

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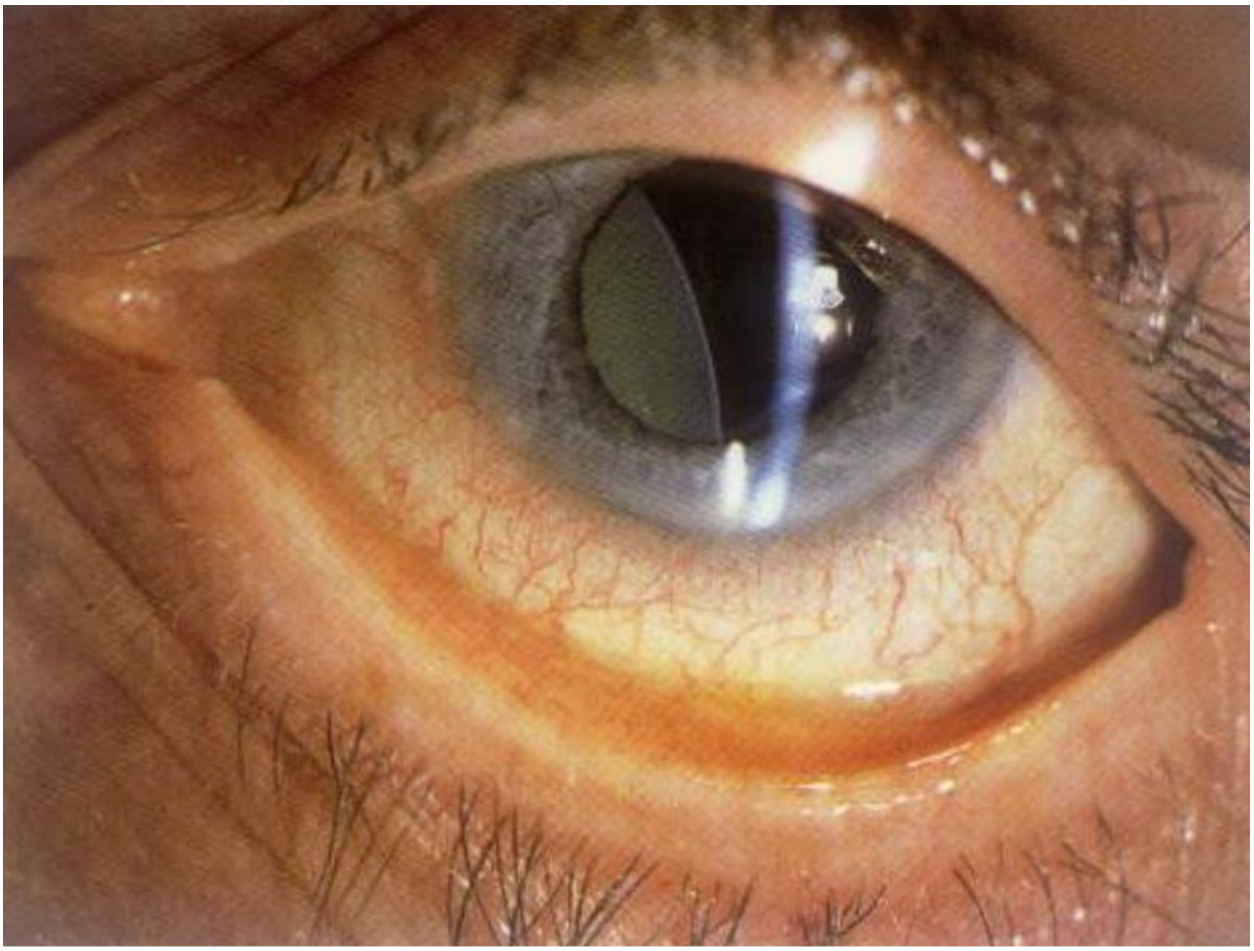

Diagnosis: Subluxation of cataractus lens

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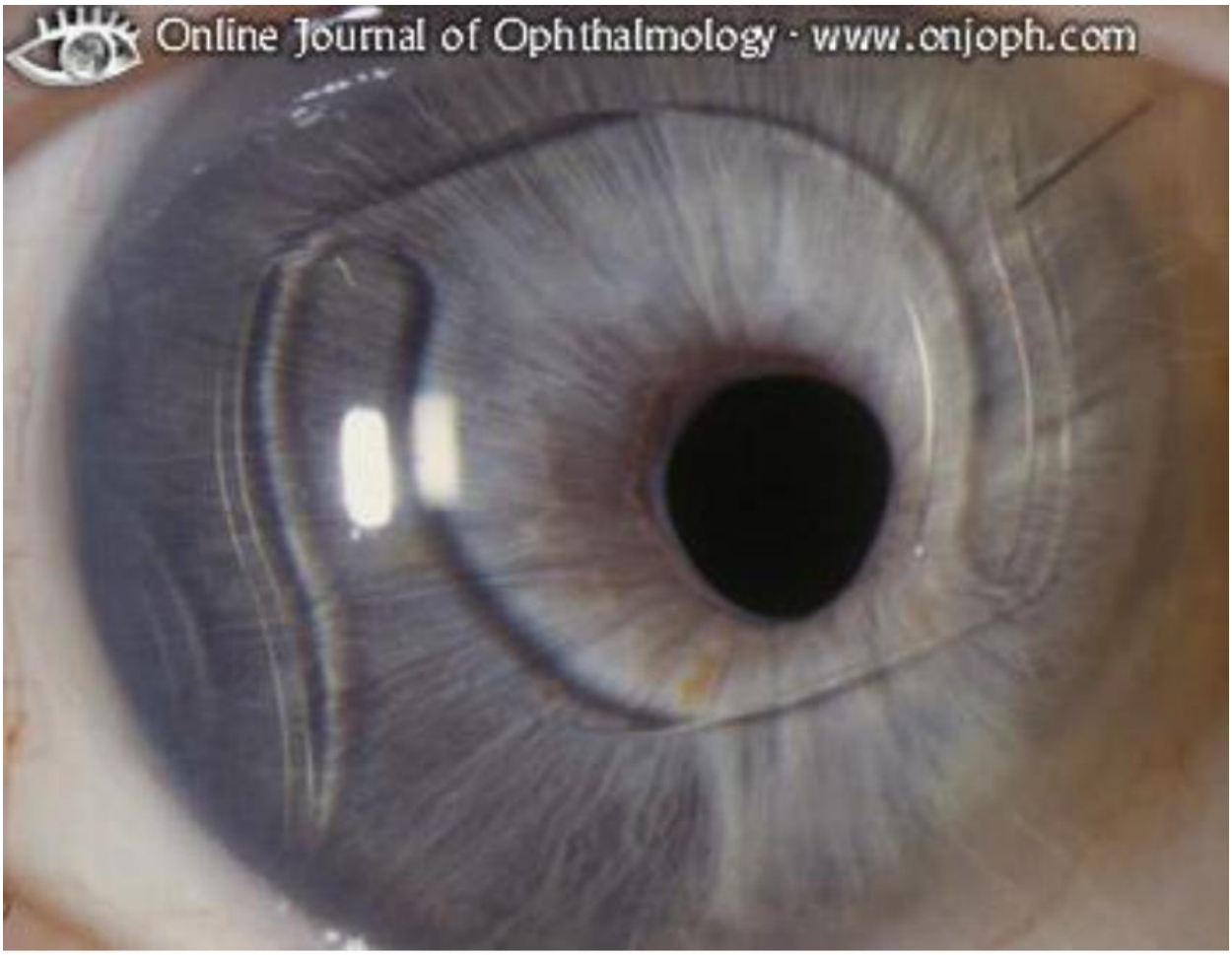

Diagnosis: Anterior Chamber IOL

Complications ?

1- Iridocyclitis
2- Pupillary Block → 2ry angle closure glaucoma
3- Corneal edema and decompensation

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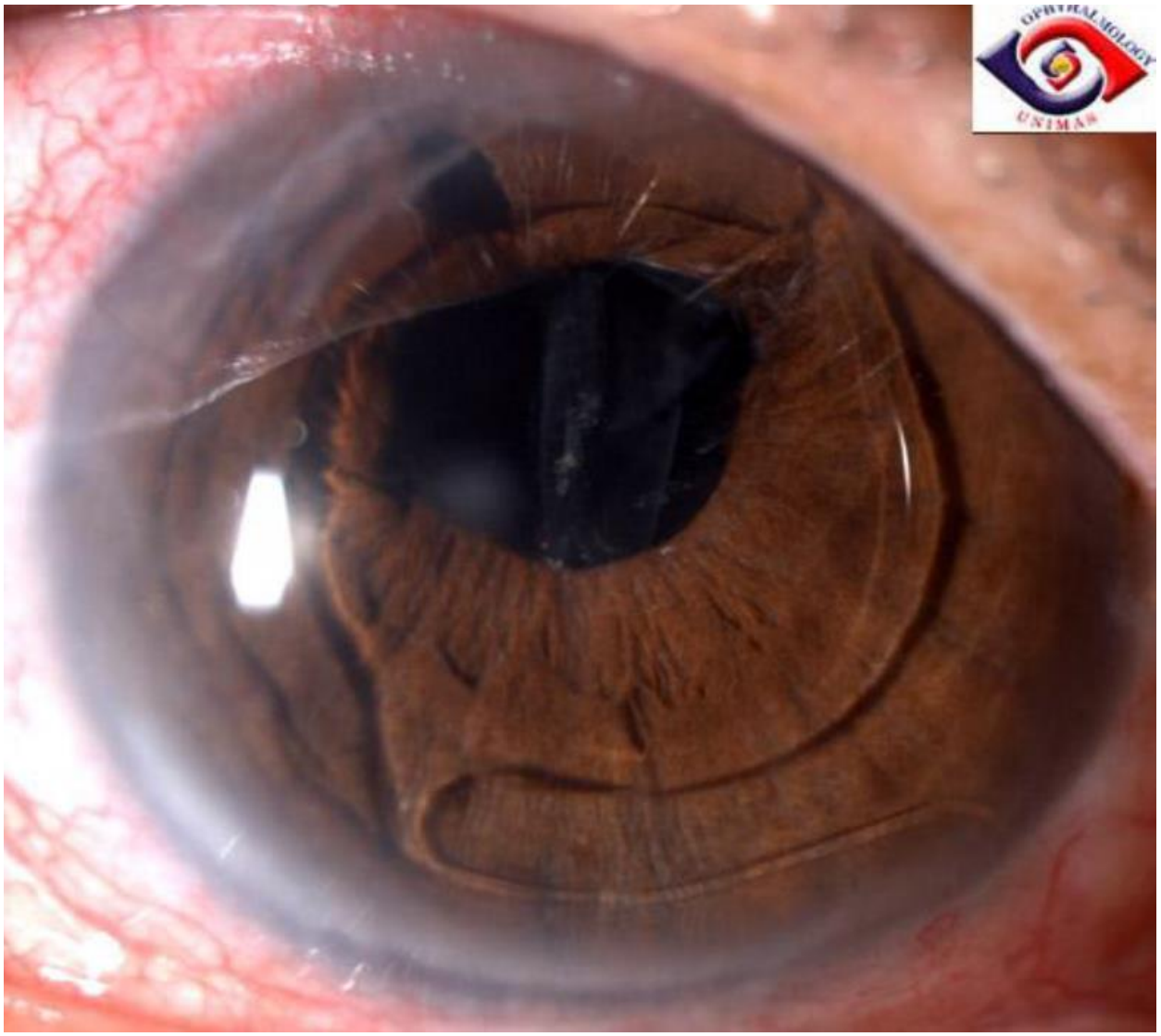

Diagnosis: Anterior chamber IOL – Irregular Pupil – Peripheral Iridotomy

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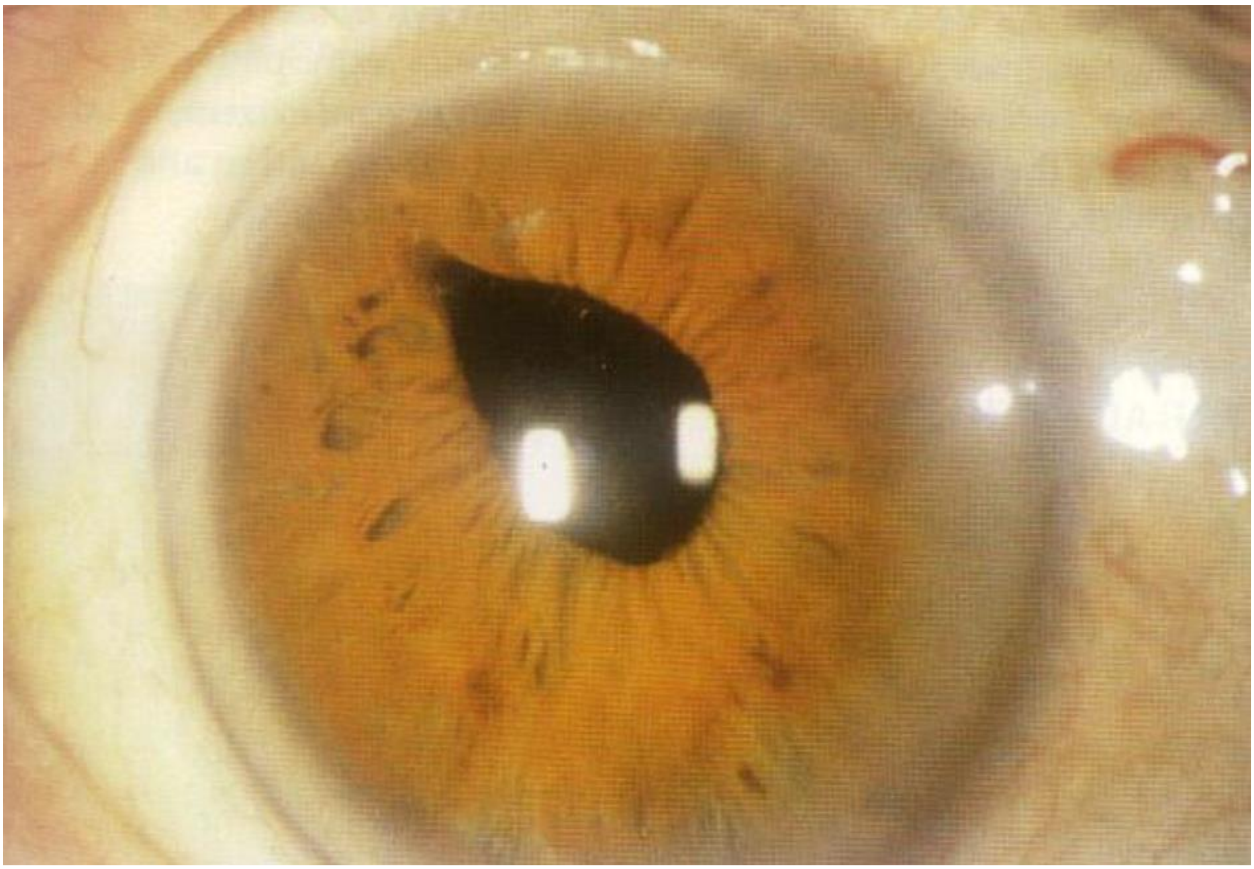

Diagnosis: Vitreous loss in cataract surgery

Findings that support your diagnosis ?

1- Pseudophakia
2- Peaked pupil

N.B. Peaking of the pupil means the presence of remnants of the vitreous at the level of the pupil. This is dangerous because it increases the risk of infection and subsequent endophthalmitis, even after trivial infections such as conjunctivitis.

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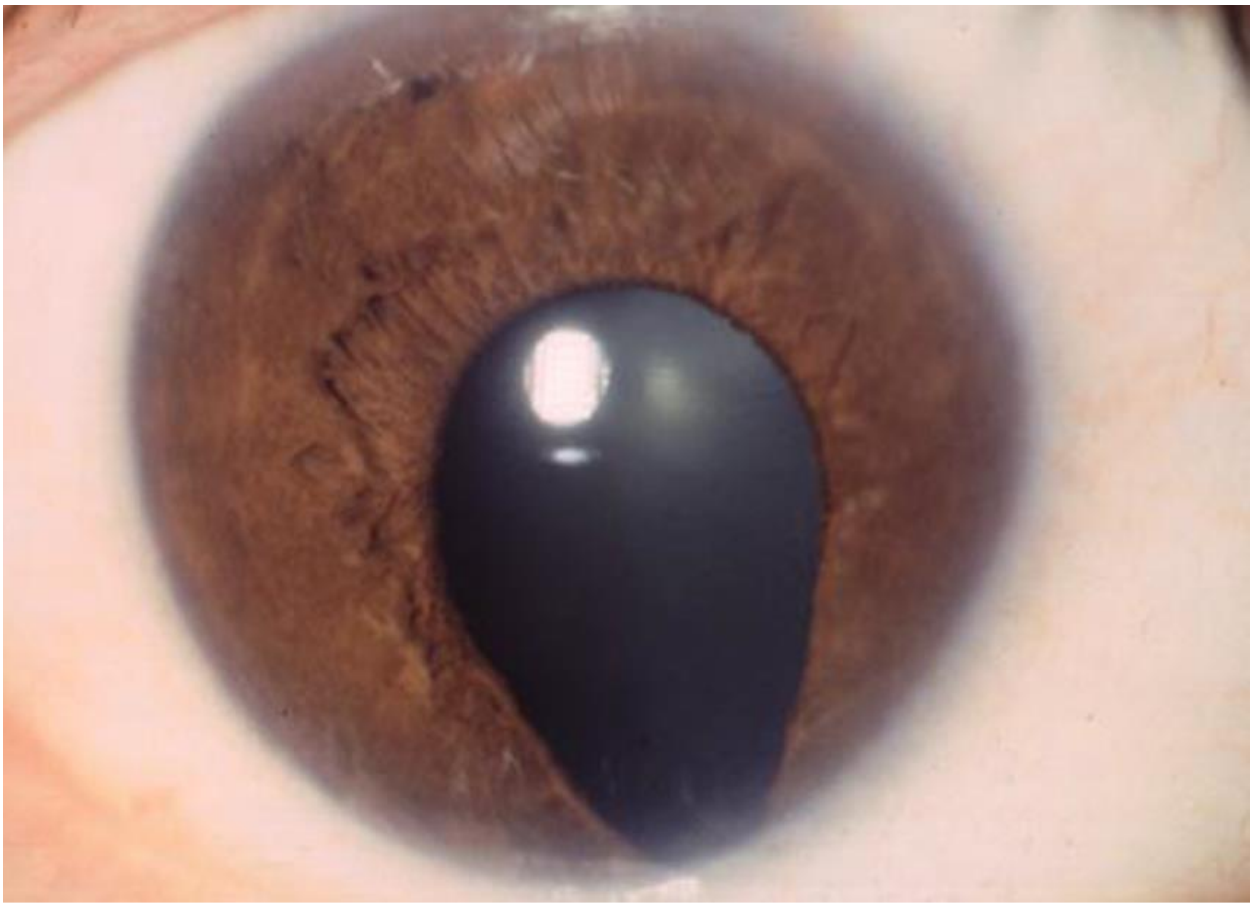

Diagnosis: Coloboma of Iris

Other ocular association?

Choroidoretinal coloboma

Treatment ?

Iridoplasty

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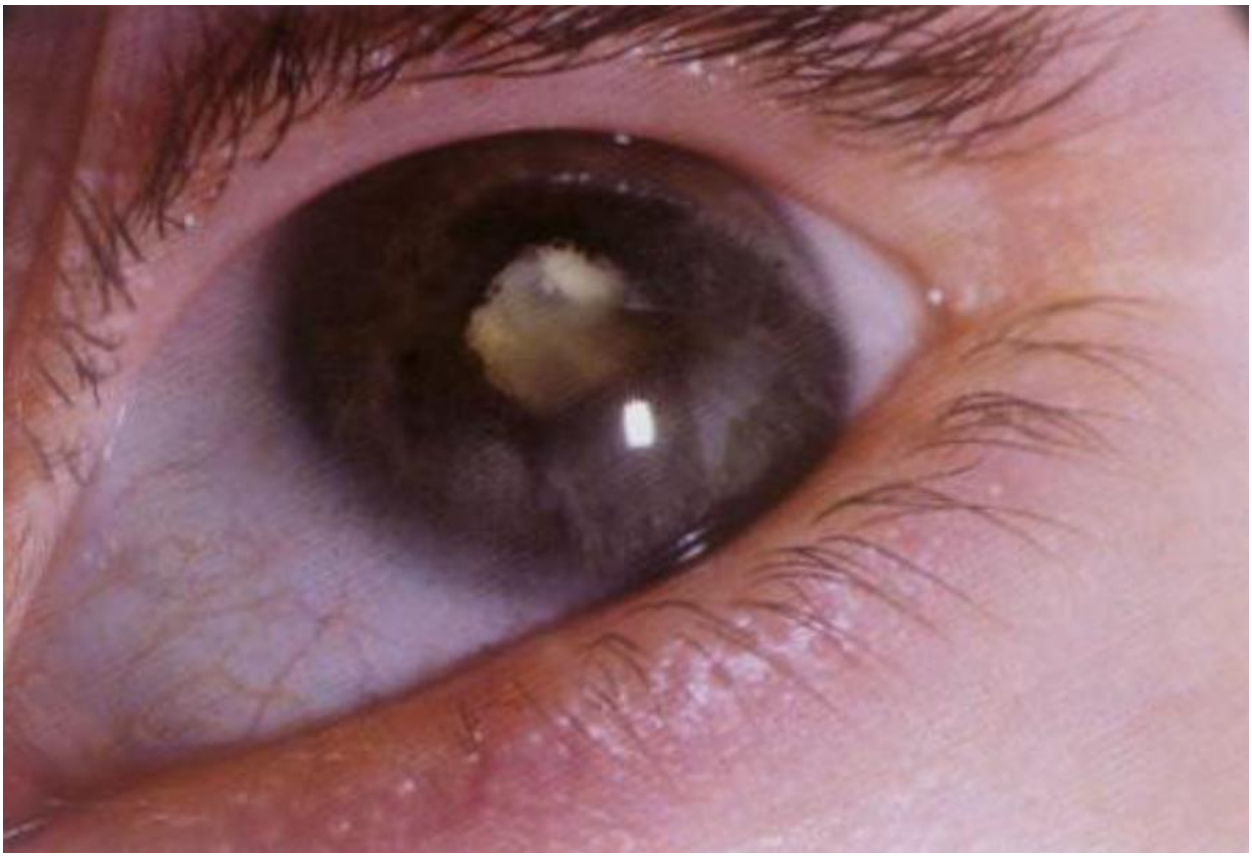

Diagnosis: Complicated cataract + festooned pupil الصورة مش واضحة قوي

Most common cause ?? chronic uveitis

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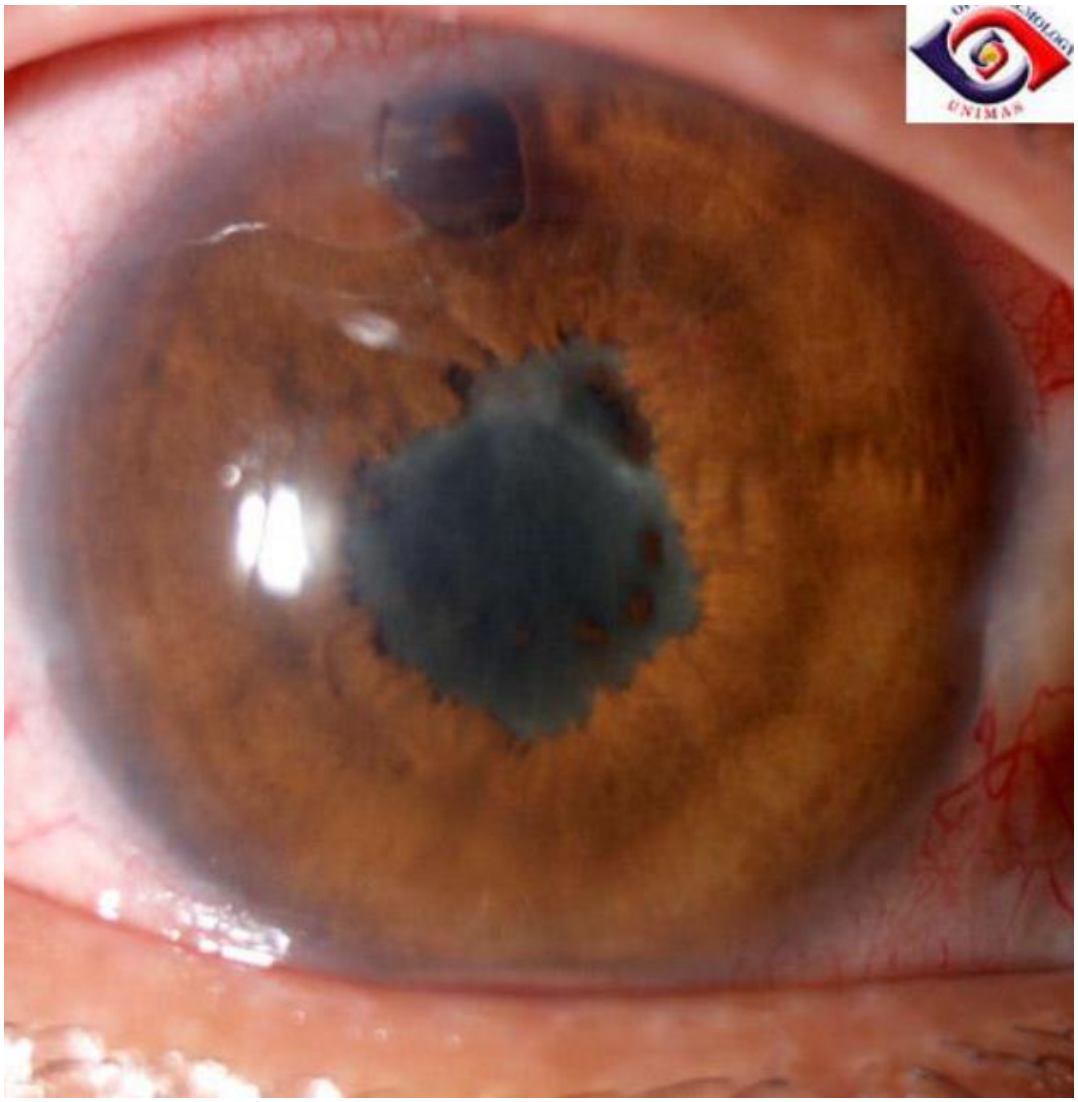

Diagnosis: Festooned pupil + Iridectomy

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Diagnosis: Both are festooned pupils

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Diagnosis: Iris Bombe + Festooned pupil

Treatment: YAG-laser peripheral iridotomy

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Diagnosis: Hypopyon + Ciliary injection

You can’t say this is a corneal ulcer because you can’t see the rest of the cornea.

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Diagnosis: post-operative endophthalmitis

Findings? Severe injection – corneal opacity – hyopopyon

Treatment ? Early → intravitreal antibiotics

Not responding → vitrectomy

No PL → Evisceration (never enucleation)

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Diagnosis: Occulsio-pupillae

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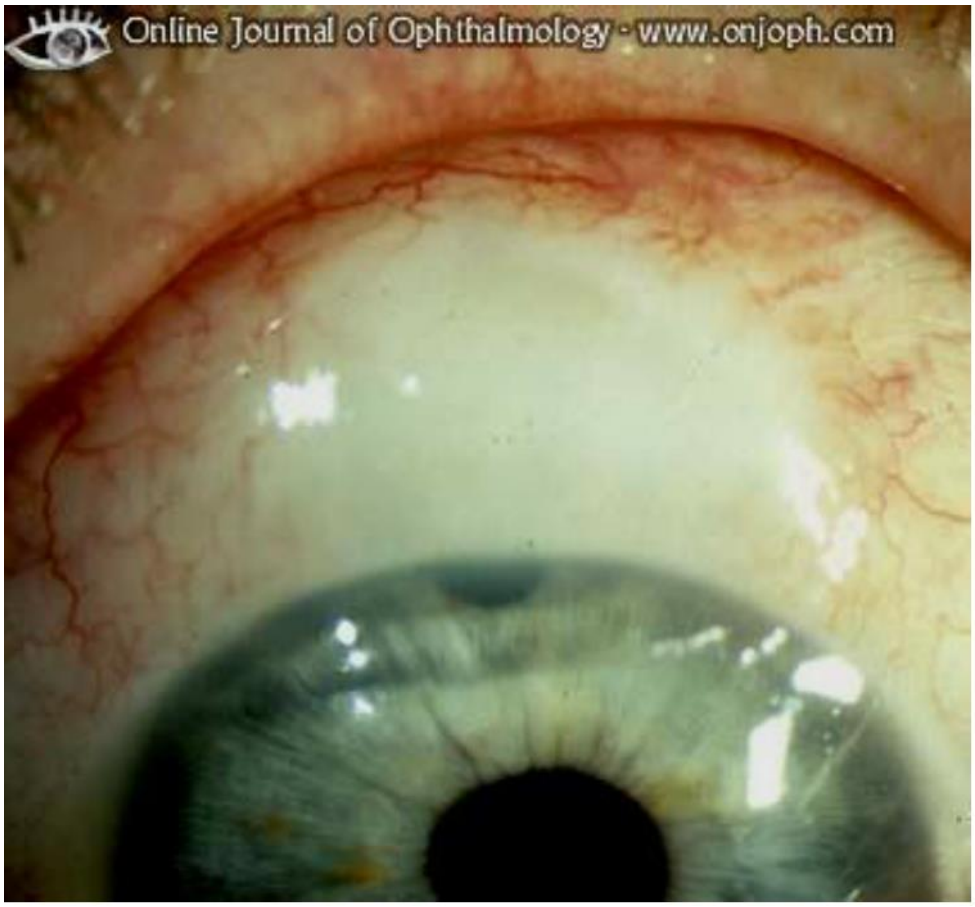

Diagnosis: Trabeculectomy

Findings ?

1- Bleb and area of no vascularization
2- Peripheral iridectomy at the level of the bleb.

Indication ?

- Primary open angle glaucoma when medical treatment and laser trabeculoplasty fail
- Primary open angle glaucoma in a non-compliant patient
- In chronic angle closure glaucoma
- In rapid deterioration of visual function
- Congenital glaucoma

N.B. Treatment of congenial glaucoma is surgical. Drugs have no role. The best surgical technique, nowadays, is a combination of trabeculotomy and trabeculectomy .

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Diagnosis: Chronic angle closure glaucoma

Findings?

1- Patchy iris atrophy indicating repeated acute attacks
2- Peripheral iridotomy
3- Irregular pupil.

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Diagnosis: Cherry Red Spot (it seems to Central retinal artery occlusion)

Differential Diagnosis of the finding ?

1- Central retinal artery occlusion
2- Commotio Retinae (Berlin's edema)
3- Macular hole
4- Quinine poisoning
5- Tay Sacks' Disease

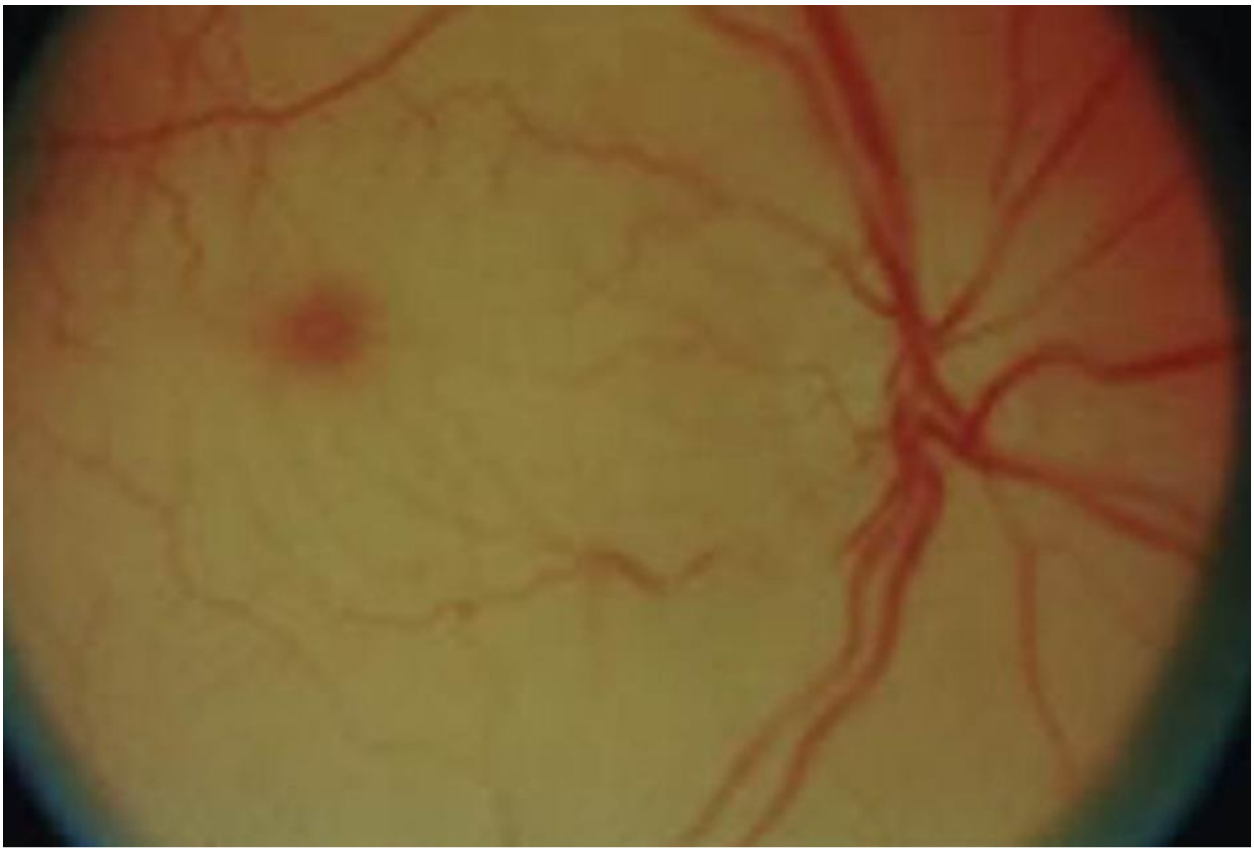
Visual Acuity in this patient ?

Never below PL (never reach No PL)

N.B. Central retinal artery occlusion doesn't cause No PL due to dual supply of the retina from the choroid. However, occlusion of the ophthalmic artery itself will lead to No PL due to obliteration of the choroidal and the central retinal artery circulations.

Immediate life-saving management ?

Anterior Chamber Paracentesis



Same as above

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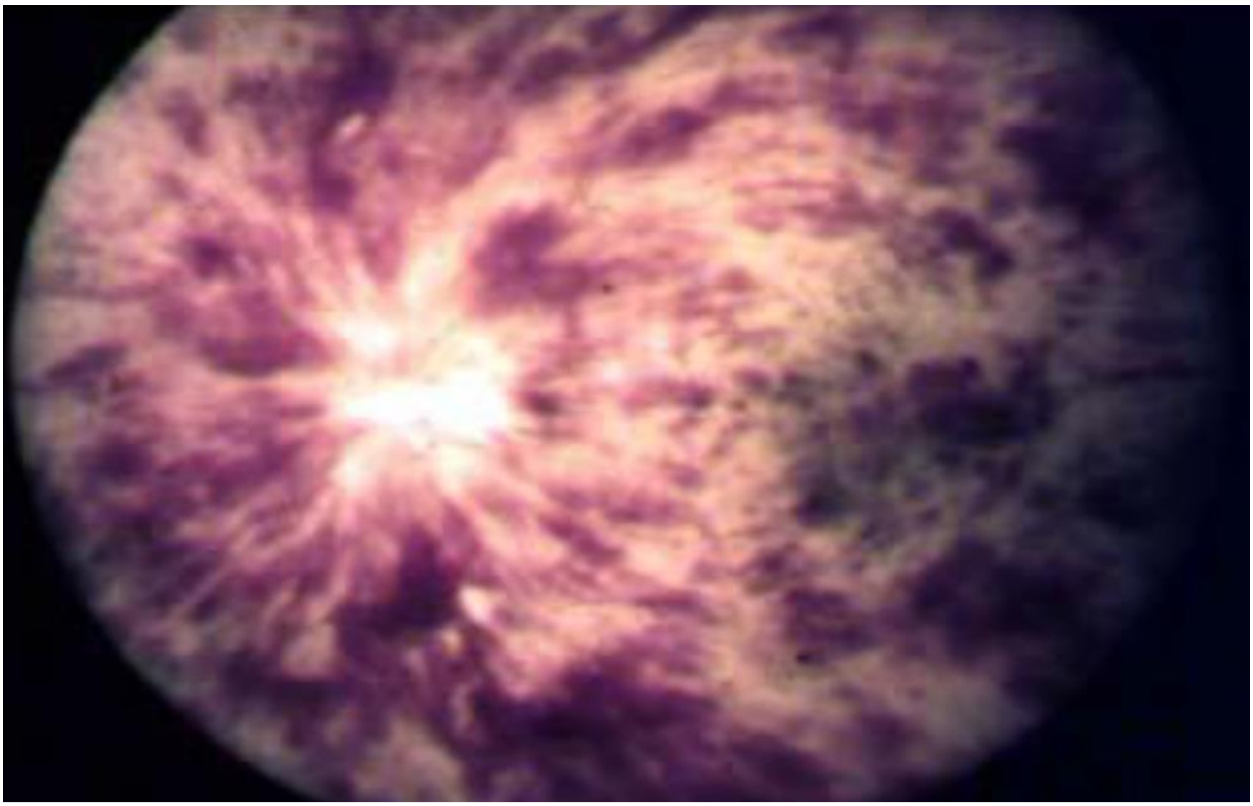

Diagnosis: central retinal vein occlusion

Types ? and how to differentiate between them ?

1- Non-ischemic
2- Ischemic

We differentiate between them using fluorescein angiography and OCT angiohraphy

Causes of visual impairments in this condition?

- Early: Macular edema
- Late: Neovascularization → vitreous hemorrhage, neovascular glaucoma, retinal detachment

Treatment:

- Macular Edema → Anti- VEGF
- Ischemia → PRP
- Vitreous Hemorrhage → Vitrectomy

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Diagnosis: Branch retinal vein occlusion

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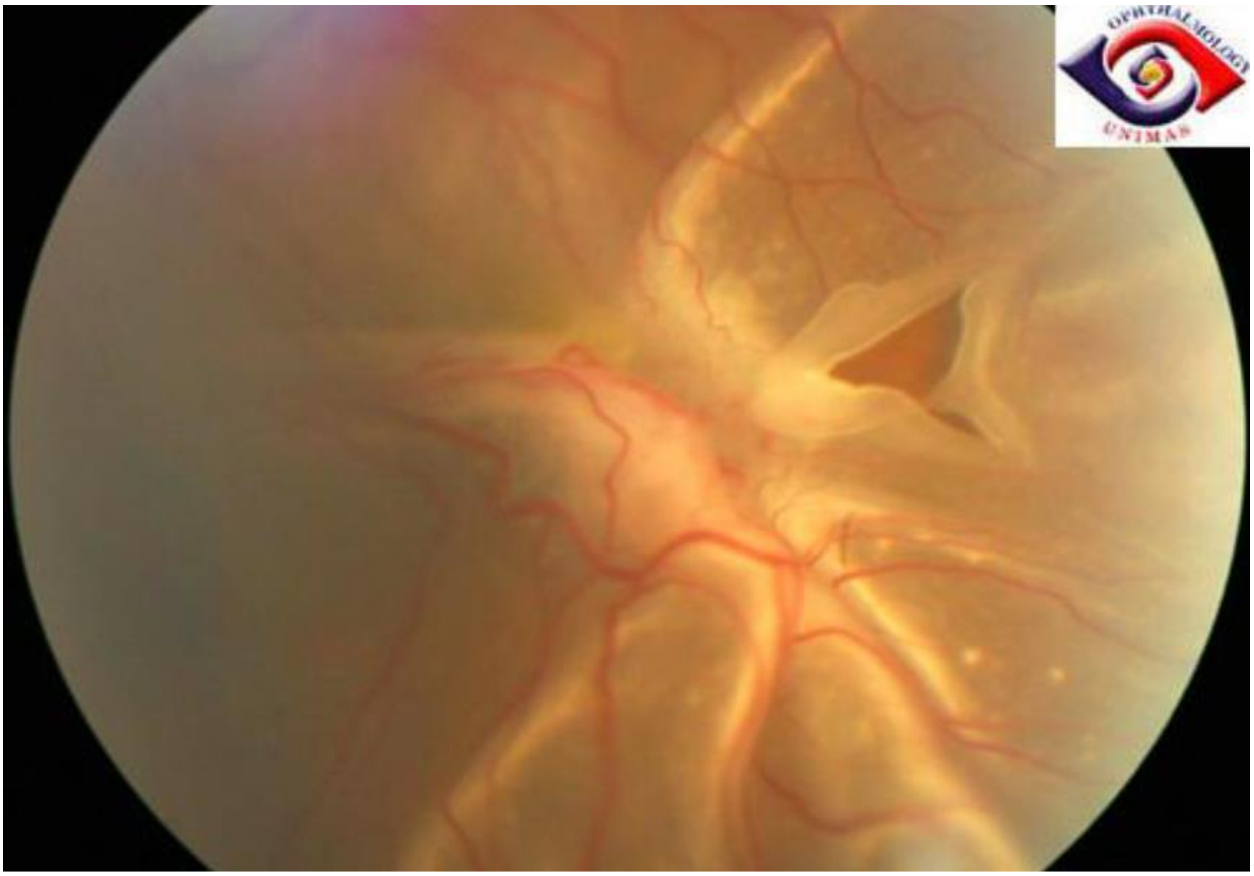

Diagnosis: Rhegmatogenous Retinal Detachment

How to treat ?

1- Cryotherapy and Scleral buckle
2- Vitrectomy and Tamponade (by air, gas or silicon oil)

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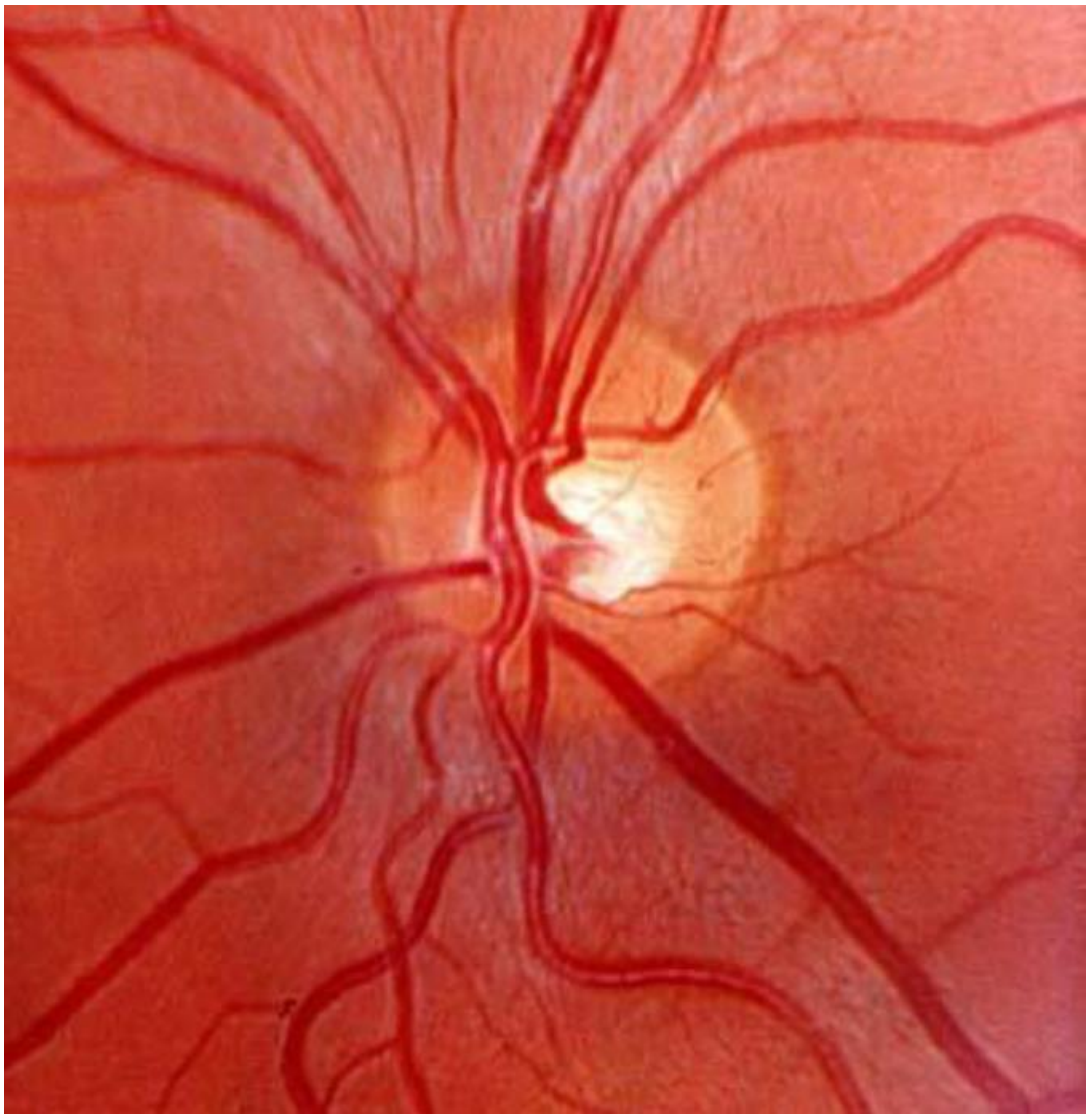

Diagnosis: Normal Optic Disc

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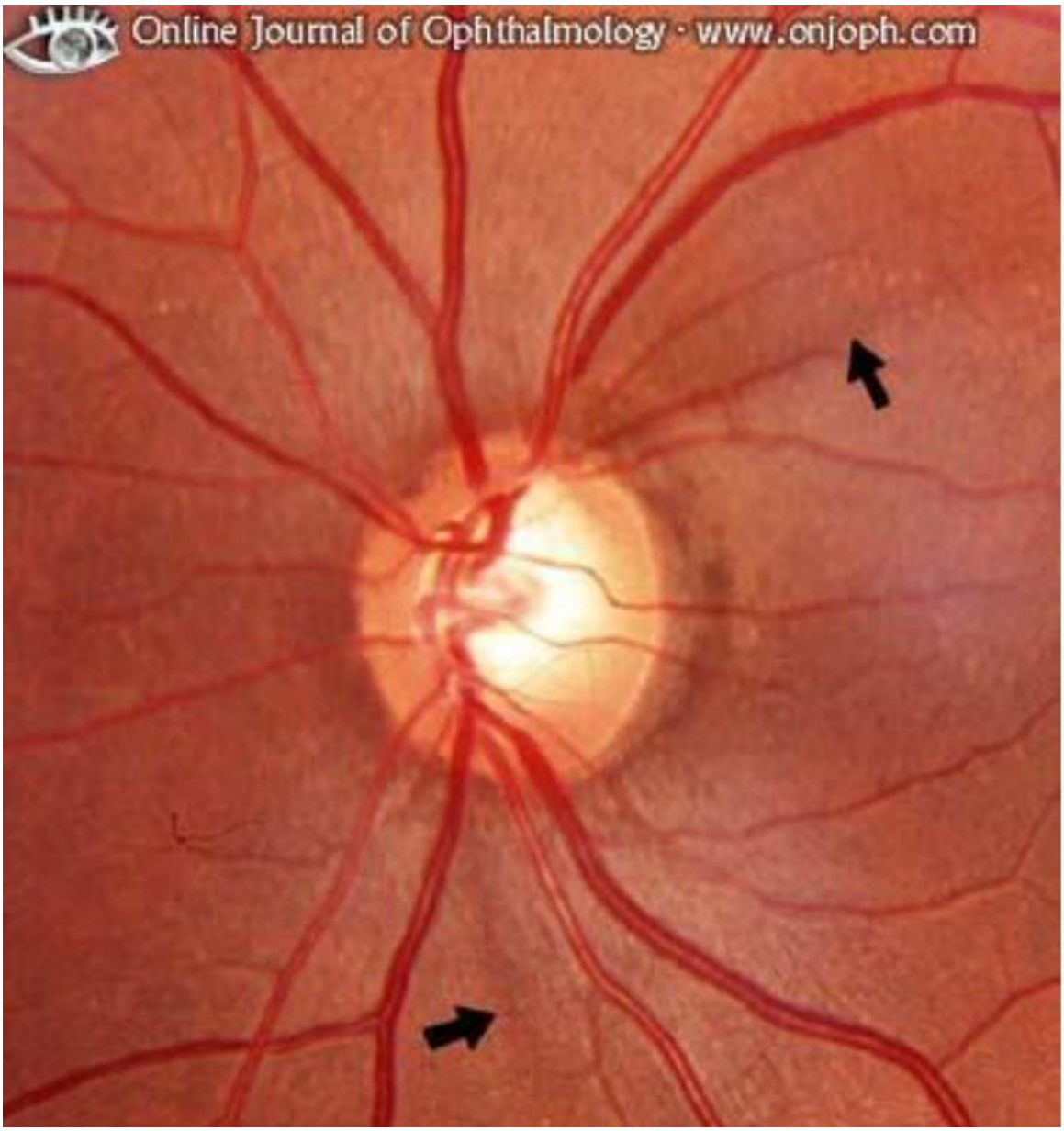

Diagnosis: Glaucomatous optic disc (cupping)

Diagnosis: Papilledema

If this condition is bilateral, you will investigate by ?

- CT brain
- CT brain angiography

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Diagnosis: Papilledema

If this condition is bilateral, you will investigate by ?

- CT brain
- CT brain angiography

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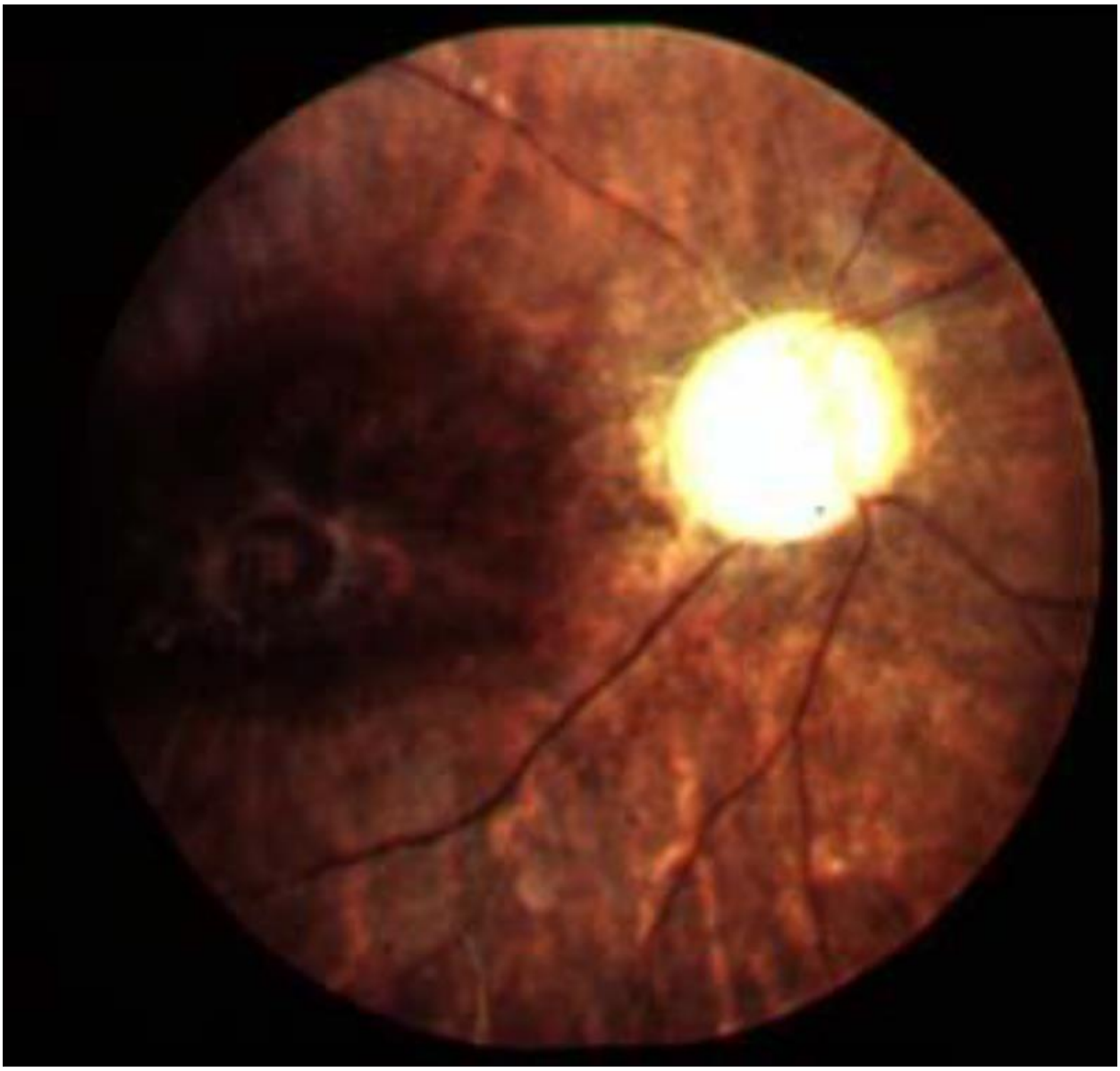

Diagnosis: Consecutive Optic atrophy

Causes ?

- High myopia
- Central retinal artery occlusion
- Retinitis pigmentosa

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Diagnosis: Retinitis Pigmentosa

Diagnostic criteria ??

1- Spidery (bony corpuscle) pigments
2- Attenuated vessels
3- Consecutive optic atrophy

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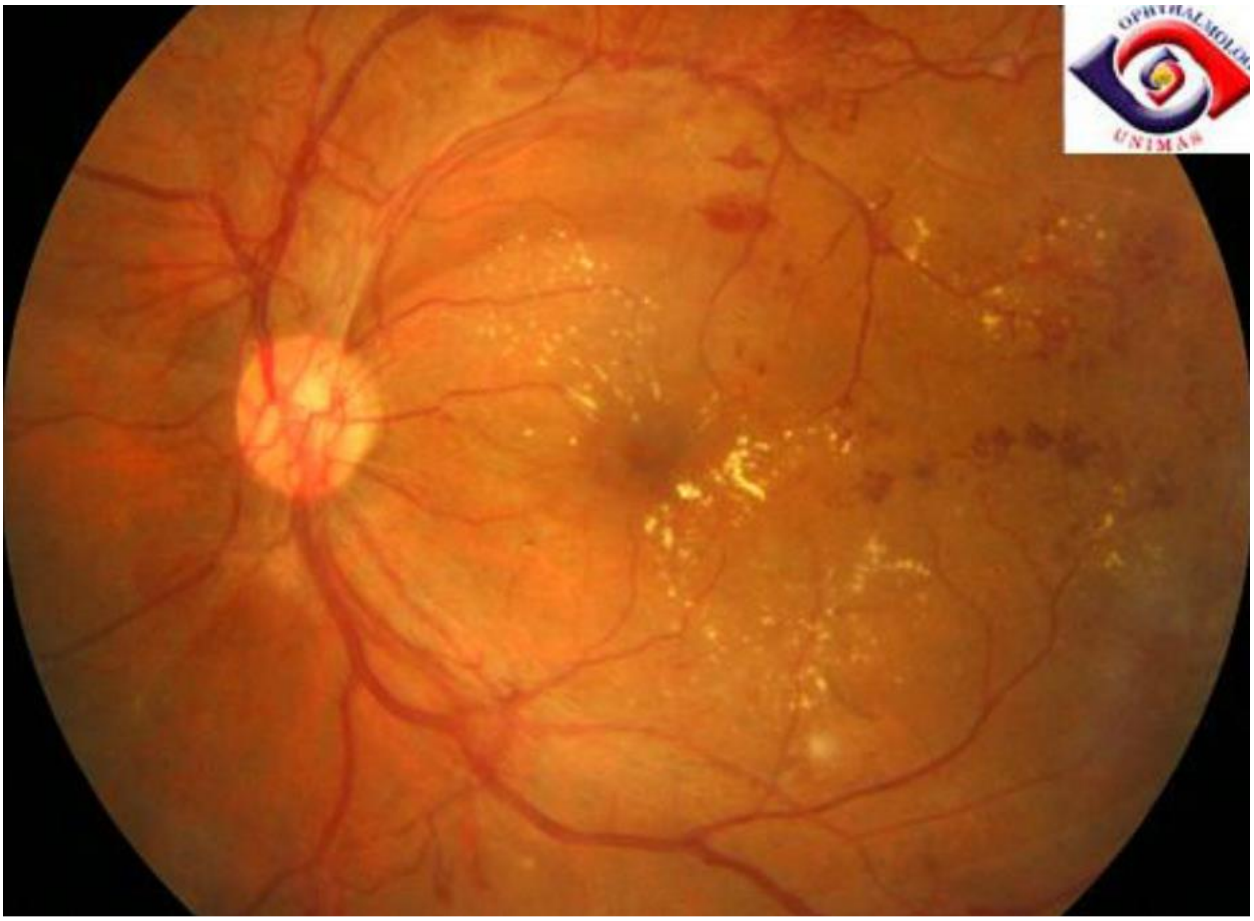


Diagnosis: Proliferative Diabetic Retinopathy

Findings? Hard exudates – Dots and blots hemorrhage – NVD – NVE

Types of hemorrhage in this patient ??

- Intraretinal dots and blots
- Subhyloid / preretinal boat shaped
- Vitreous hemorrhage

Causes of visual impairment in this patient ?

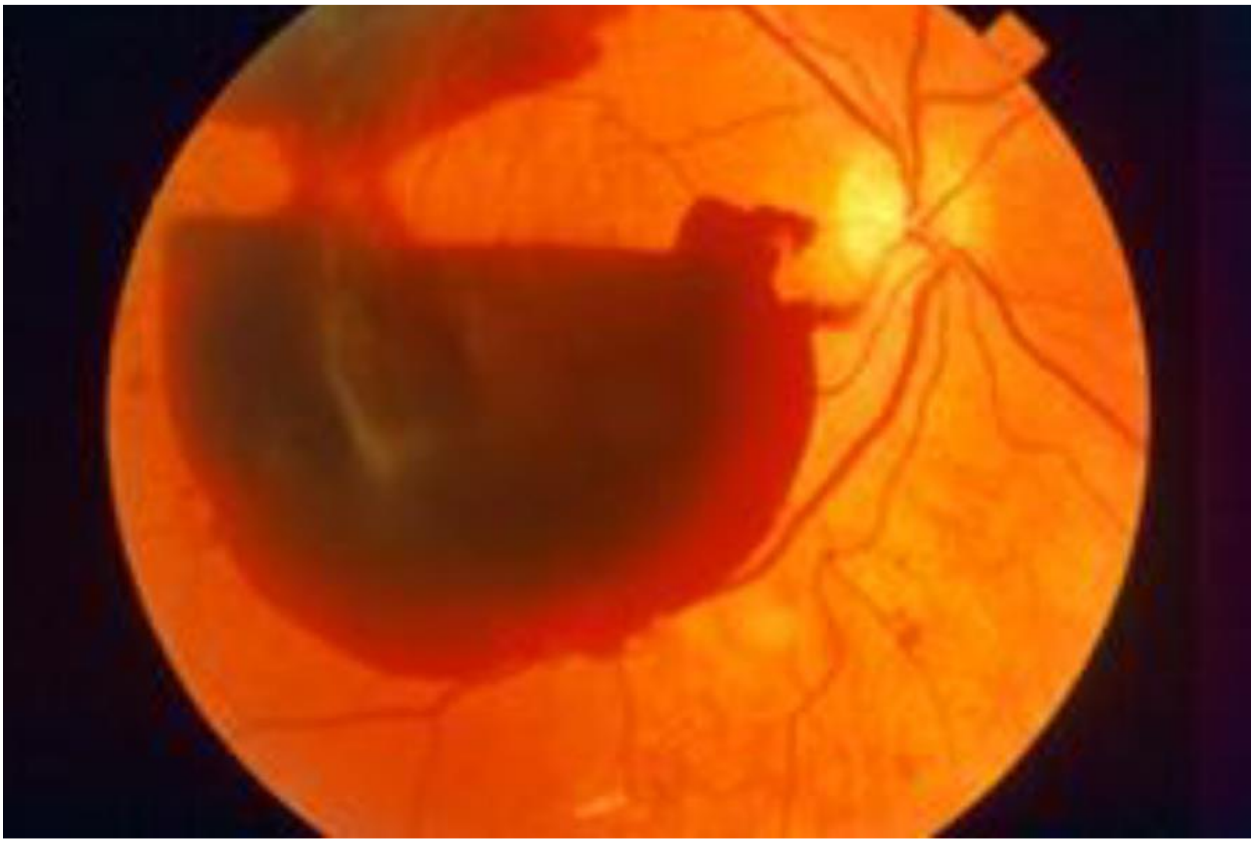
- Macular edema
- Vitreous hemorrhage
- Retinal detachment
- Neovascular glaucoma
- Diabetic cataract (True or presenile)

Diagnosis: Proliferative Diabetic Retinopathy with scars of Panretinal Photocoagulation

في دوائر غامقة شوية موجودو بوضوح في الجزء الشمال خالص

How to perform PRP ??

1- ***Start from the inferior temporal arcade and move downward as much as you can.***
2- ***Start from the superior temporal arcade and move upward as much as you can .***
3- ***Start from a point about one-disc diameter nasal to the disc and move nasally as much as you can.***
4- ***Start from a point about two-disc diameter temporal to the fovea and move temporally as much as you can.***
5- ***PRP shouldn't be tight or it will lead to tubular field. (you should leave a certain distance between the shots)***



Diagnosis: Subhyloid Hemorrhage

Management: Vitrectomy

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Diagnosis: hyphema

Complications:

1- Re-bleeding
2- Corneal stinging
3- 2ry Glaucoma
4- Optic atrophy

Most important step in management ?

HOSPITALIZATION

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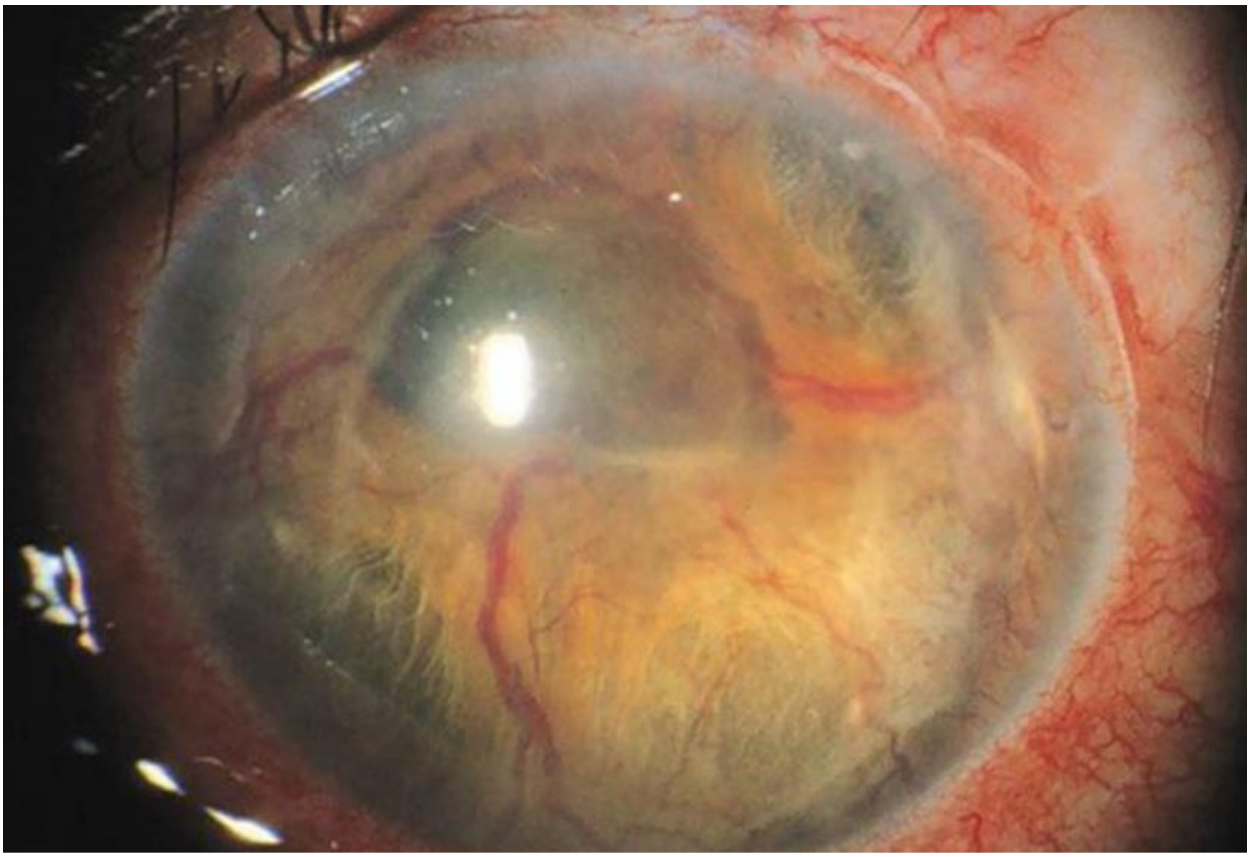


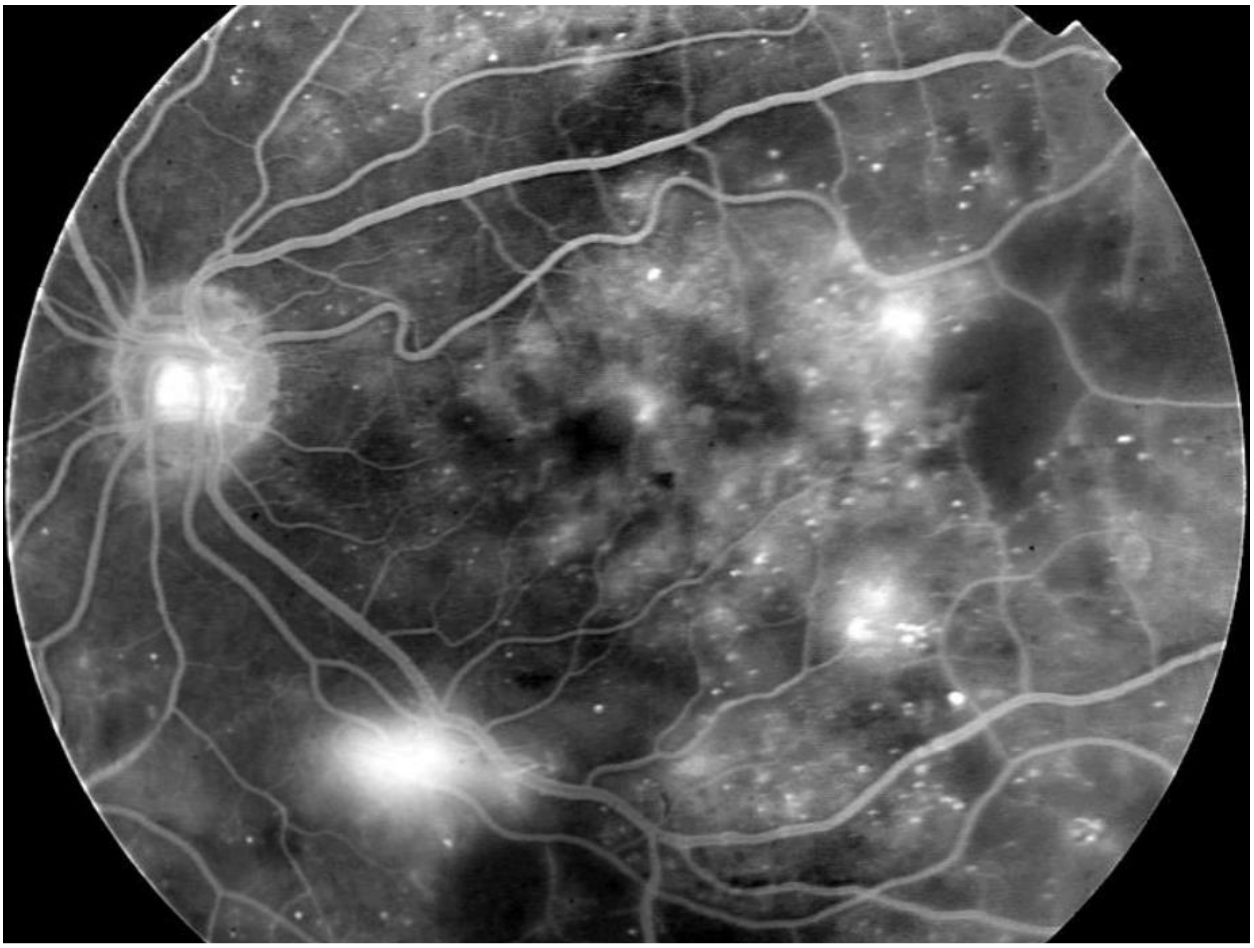
Diagnosis: Rubeosis iridis

Causes:

- Proliferative Diabetic Retinopathy
- Ischemic Central Retinal Vein Occlusion (100-day glaucoma)

Complications :

- Hyphema →2ry open angle glaucoma
- Angle infiltration with pulling on iris → 2ry angle closure glaucoma



Diagnosis: Fluorescein angiography showing leakage which indicates neovascularization

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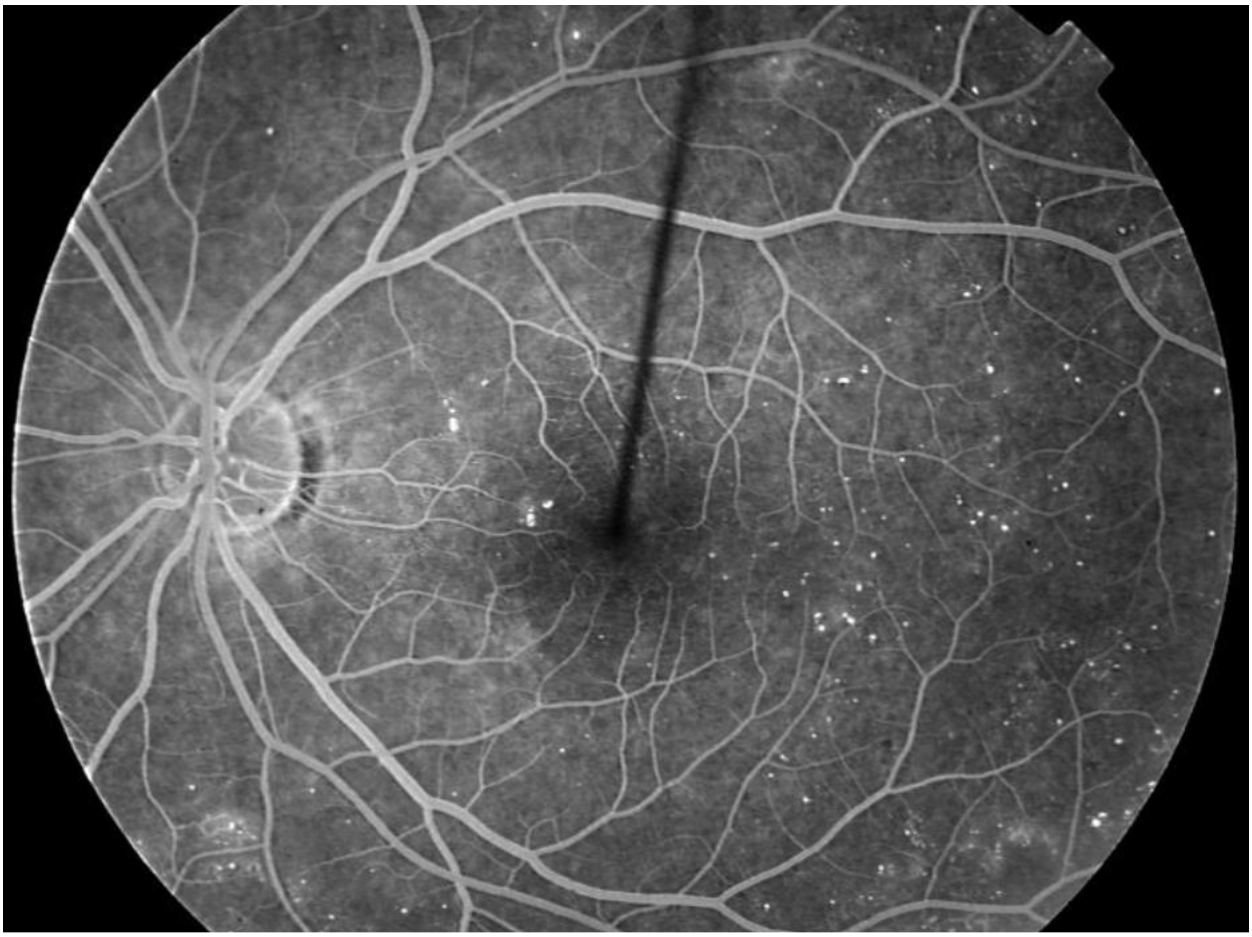

Diagnosis: Fluorescein angiography showing microaneurysms.

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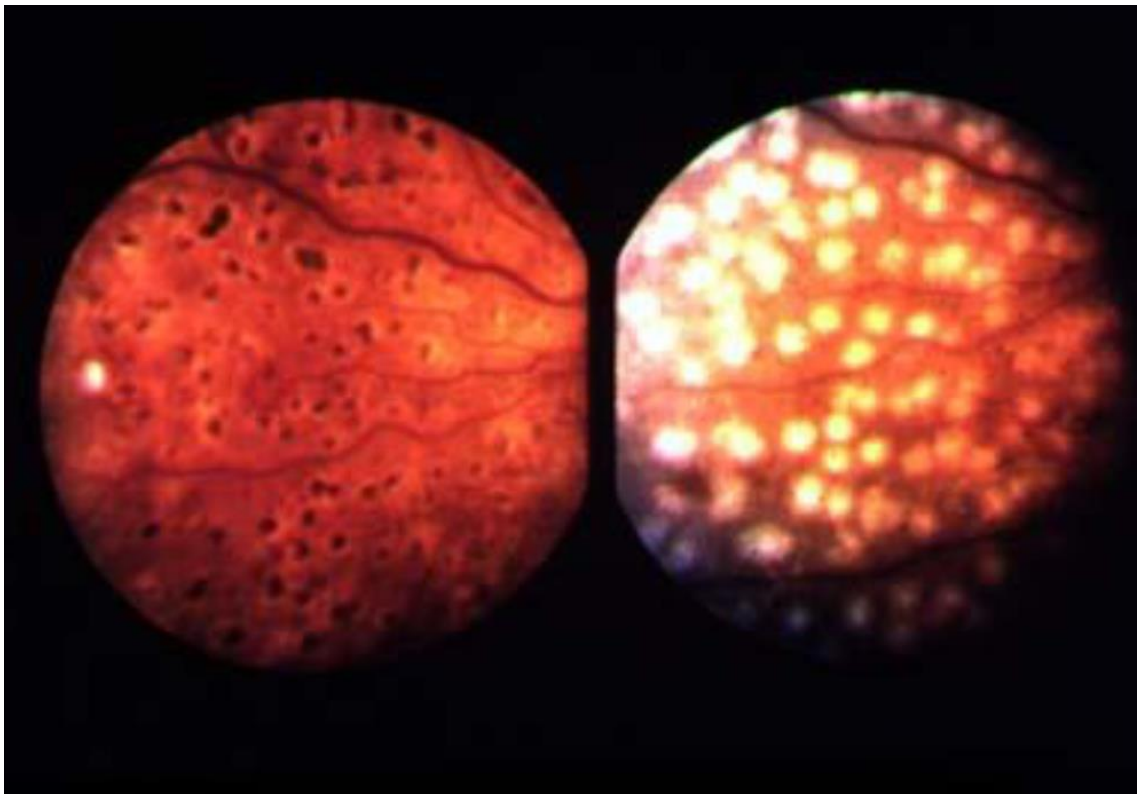

Diagnosis: PRP scars

Diagnosis: PRP

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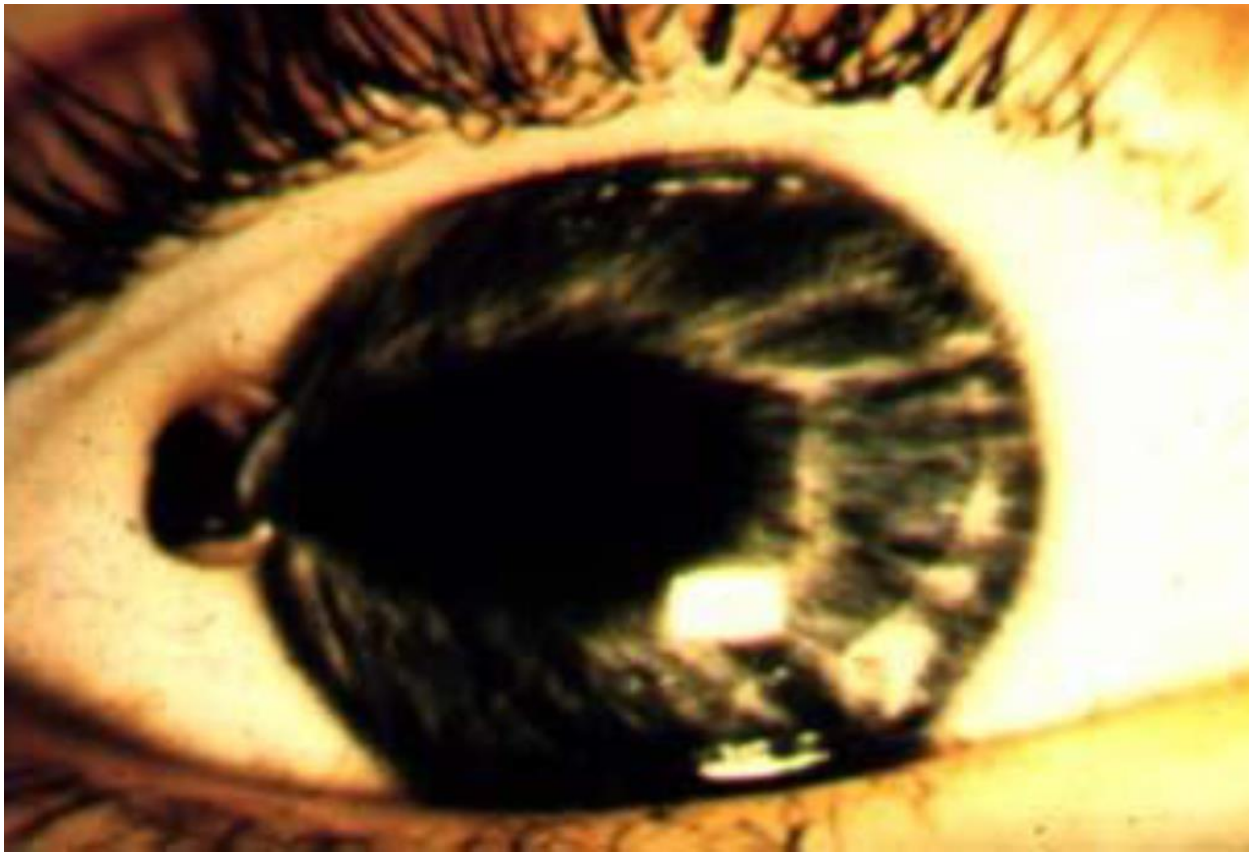
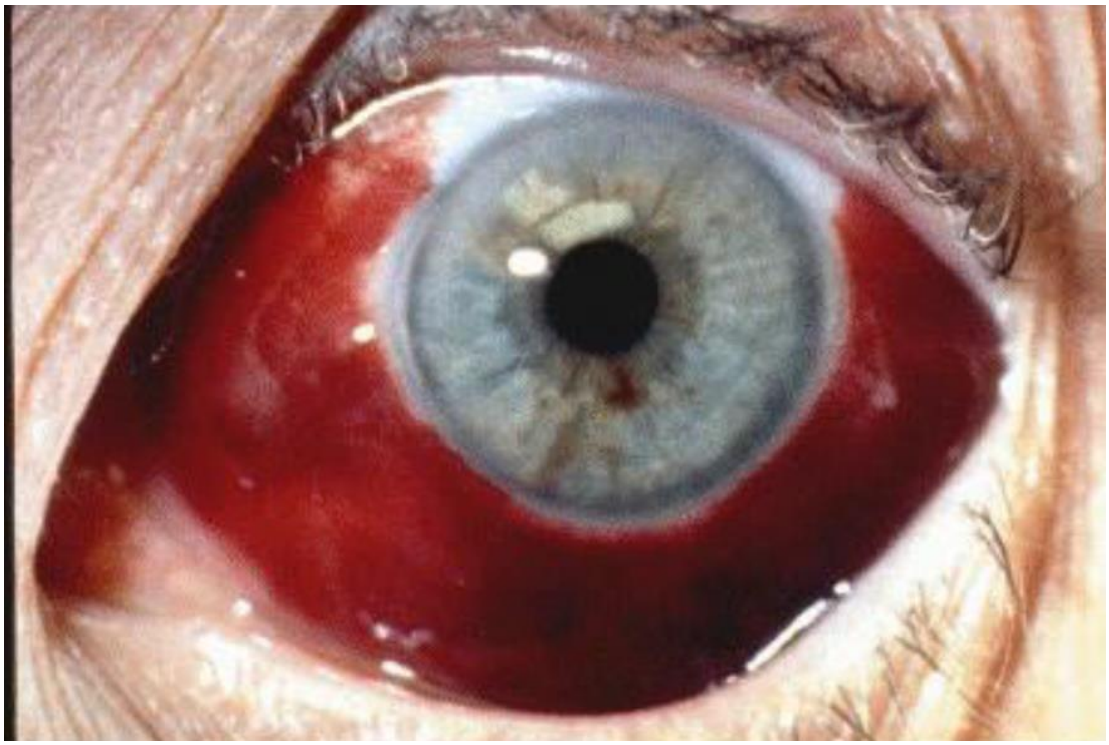
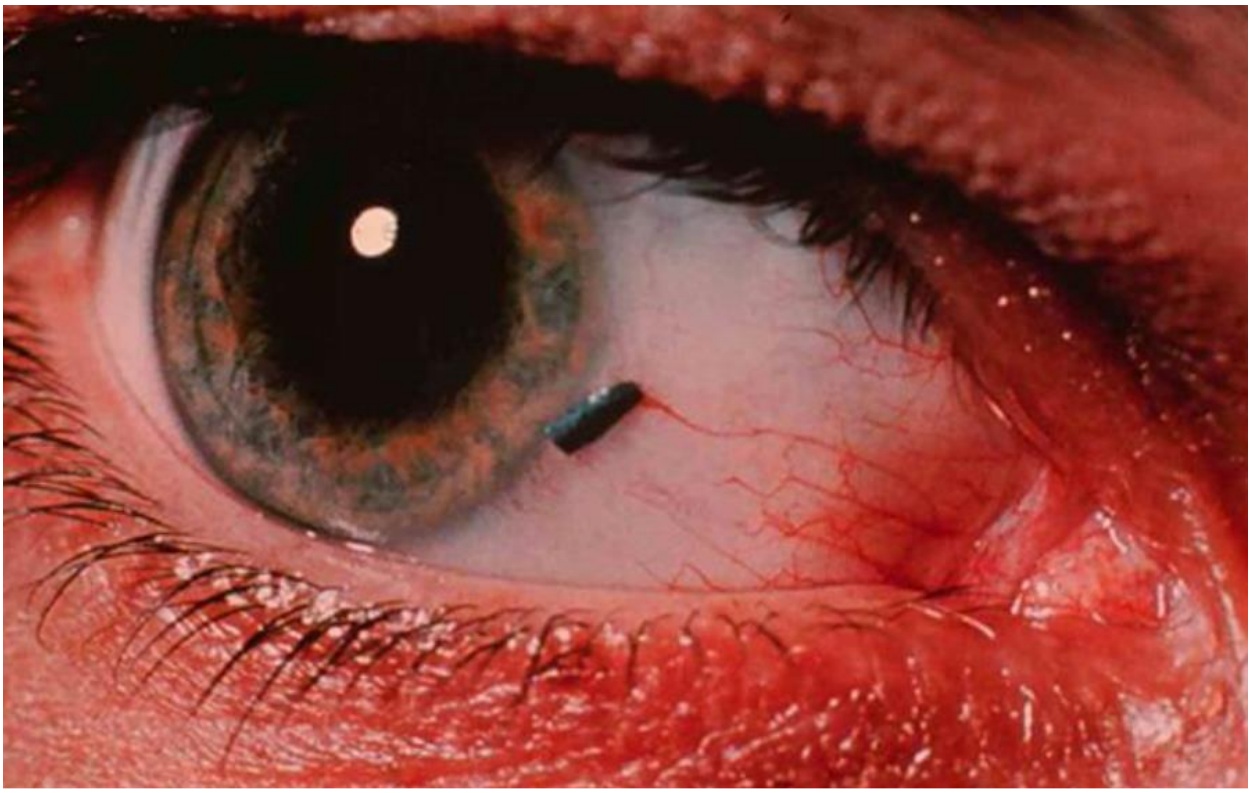


Diagnosis: Corneal foreign body in both

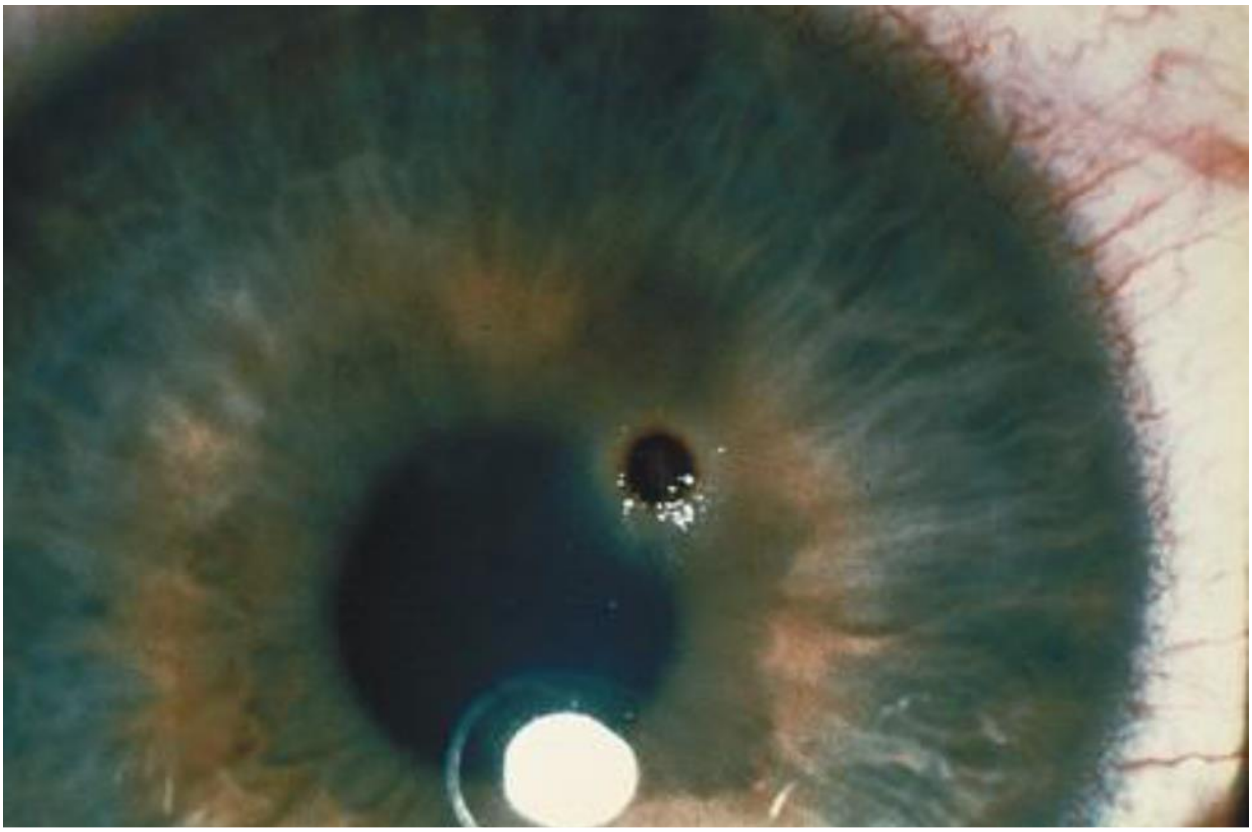


Diagnosis: subconjunctival hemorrhage

Diagnosis: Hyphema



Diagnosis: Foreign body through sclera



Diagnosis: Corneal foreign body

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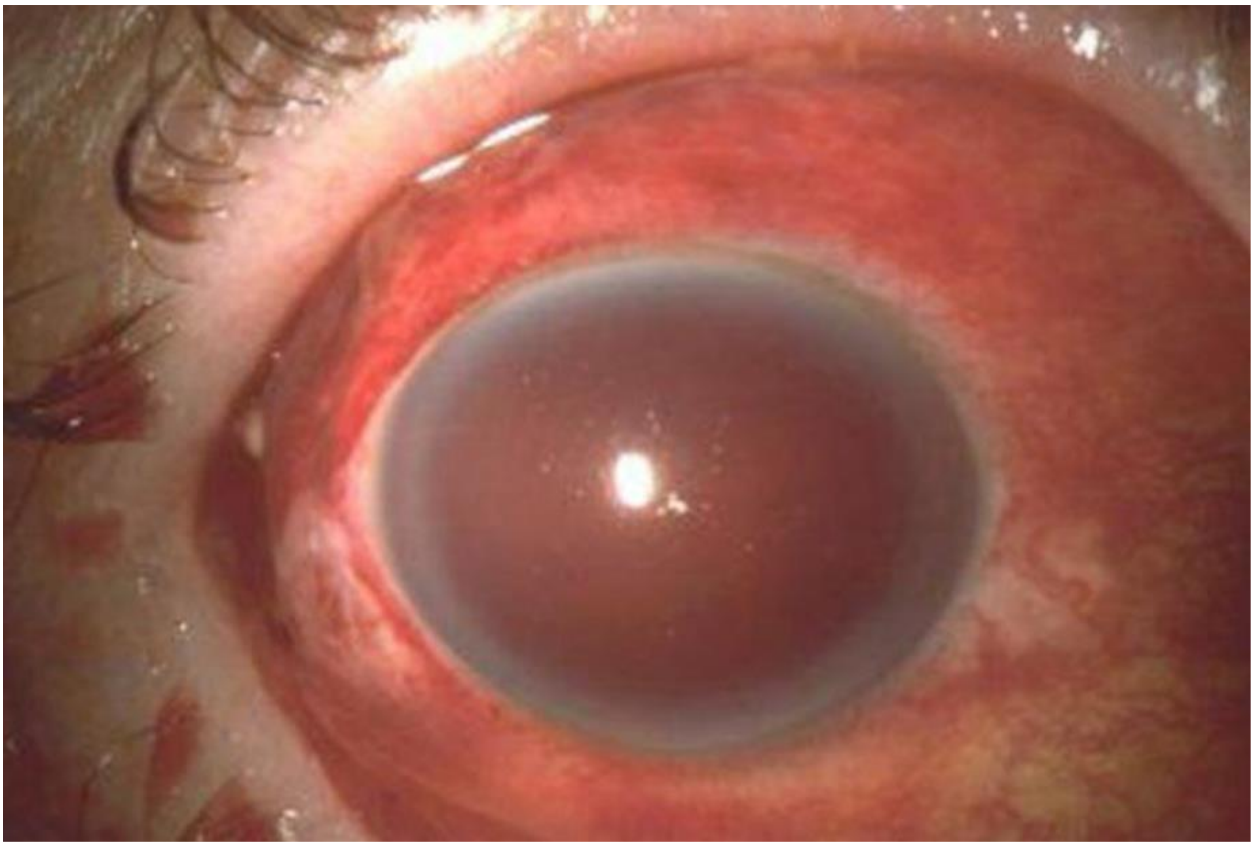

Diagnosis: Total Hyphema

Grades of hyphema ??

- Grade 0 → microscopic
- Grade 1 → less than 1/3
- Grade 2 → more than 1/3 but less than ½
- Grade 3 → more than ½ but not total
- Grade 4 → total